THE LORENTZ TRANSFORMATION

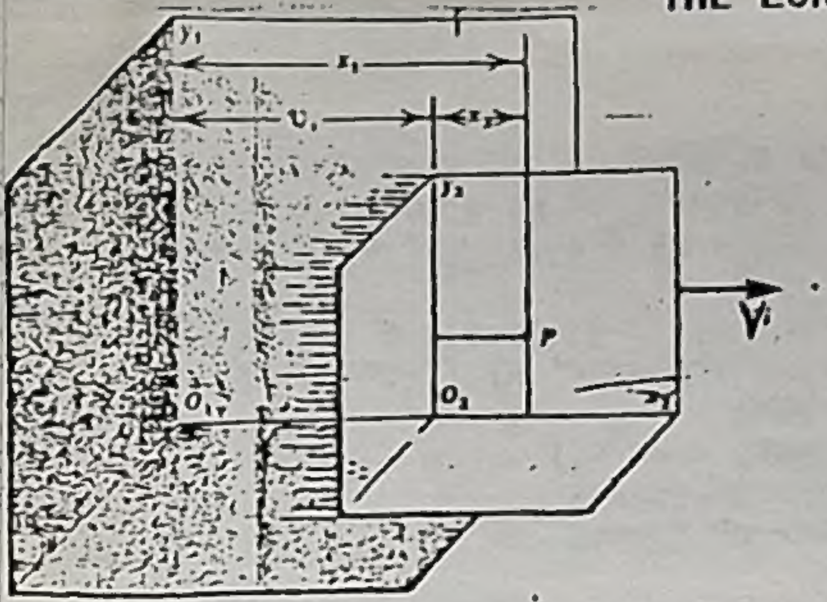


Figure 5-7. The Lorentz transformation refers to these two coordinate systems. System 2 moves at a velocity $V\mathbf{i}$ with respect to 1 in the positive direction of the common x-axis. The two systems overlap when O_1 and O_2 coincide.

THE LORENTZ TRANSFORMATION

$x_1=\gamma(x_2+vt_2)$	$x_2=\gamma(x_1-vt_1)$
$y_1=y_2$	$y_2=y_1$
$z_1=z_2$	$z_2=z_1$
$t_1=\gamma\{t_2+(v/c^2)x_2\}$	$t_2=\gamma\{t_1-(v/c^2)x_1\}$

$$\gamma=\frac{1}{\{1-(v/c)^2\}^{\frac{1}{2}}}$$

TRANSFORMATION OF A VELOCITY

$v_{1x}=\dfrac{v_{2x}+V}{1+(v_{2x}V/c^2)}$	$v_{2x}=\dfrac{v_{1x}-V}{1-(v_{1x}V/c^2)}$
$v_{1y}=\dfrac{v_{2y}}{\gamma\{1+(v_{2x}V/c^2)\}}$	$v_{2y}=\dfrac{v_{1y}}{\gamma\{1-(v_{1x}V/c^2)\}}$
$v_{1z}=\dfrac{v_{2z}}{\gamma\{1+(v_{2x}V/c^2)\}}$	$v_{2z}=\dfrac{v_{1z}}{\gamma\{1-(v_{1x}V/c^2)\}}$

RELATIVISTIC MASS. The mass m of an object moving with a velocity v with respect to the observer is

$$m=\frac{m_o}{\{1-(v/c)^2\}^{\frac{1}{2}}}$$

where m_o is rest mass.

TRANSFORMATION OF A MASS

$$m_1=\gamma\{1+(v_{2x}V/c^2)\}m_2;$$

$$m_2=\gamma\{1-(v_{1x}V/c^2)\}m_1.$$

TRANSFORMATION OF A FOUR-MOMENTUM

$p_{1x}=\gamma\{p_{2x}+V(\varepsilon_2/c^2)\}$	$p_{2x}=\gamma\{p_{1x}-V(\varepsilon_1/c^2)\}$
$p_{1y}=p_{2y}$	$p_{2y}=p_{1y}$
$p_{1z}=p_{2z}$	$p_{2z}=p_{1z}$
$\varepsilon_1/c^2=\gamma\{(\varepsilon_2/c^2)+(V/c^2)p_{2x}\}$	$\varepsilon_2/c^2=\gamma\{(\varepsilon_1/c^2)-(v/c^2)p_{1z}\}$

where $\varepsilon_2=m_2c^2$ is the relativistiv energy of the mass m in reference frame 2.

TRANSFORMATION OF ELECTRIC AND MAGNETIC FIELDS

$E_{1x}=E_{2x}$	$E_{2x}=E_{1x}$
$E_{1y}=\gamma\{E_{2y}+VB_{2z}\}$	$E_{2y}=\gamma\{E_{1y}-VB_{1z}\}$
$E_{1z}=\gamma(E_{2z}-VB_{2y})$	$E_{2z}=\gamma(E_{1z}+VB_{1y})$
$B_{1x}=B_{2x}$	$B_{2x}=B_{1x}$
$B_{1y}=\gamma\{B_{2y}-(V/c^2)E_{2z}\}$	$B_{2y}=\gamma\{B_{1y}+(V/c^2)E_{1z}\}$
$B_{1z}=\gamma(B_{2z}+(V/c^2)E_{2y})$	$B_{2z}=\gamma(B_{1z}-(V/c^2)E_{1y})$

TRANSFORMATION OF AN ACCELERATION

$$a_{1x}=\frac{a_{2x}}{\gamma^3\{1+(v_{2x}V/c^2)\}^3}$$

$$a_{1y}=\frac{1}{\gamma^2\{1+(v_{2x}V/c^2)\}^2}\left\{a_{2y}-\frac{v_{2y}V}{c^2+v_{2x}V}a_{2x}\right\}$$

$$a_{1z}=\frac{1}{\gamma^2\{1+(v_{2x}V/c^2)\}^2}\left\{a_{2z}-\frac{v_{2z}V}{c^2+v_{2x}V}a_{2x}\right\}$$

$$a_{2x}=\frac{a_{1x}}{\gamma^3\{1-(v_{1x}V/c^2)\}^3}$$

$$a_{2y}=\frac{1}{\gamma^2\{1-(v_{1x}V/c^2)\}^2}\left\{a_{1y}+\frac{v_{1y}V}{c^2-v_{1x}V}a_{1x}\right\}$$

$$a_{2z}=\frac{1}{\gamma^2\{1-(v_{1x}V/c^2)\}^2}\left\{a_{1z}+\frac{v_{1z}V}{c^2-v_{1x}V}a_{1x}\right\}$$

TRANSFORMATION OF A FORCE

$$X_1=X_2+\frac{V}{c^2+v_{2x}V}(v_{2y}Y_2+v_{2z}Z_2)$$

$$Y_1=\frac{Y_2}{\gamma\{1+(v_{2x}V/c^2)\}}$$

$$Z_1=\frac{Z_2}{\gamma\{1+(v_{2x}V/c^2)\}}$$

$$X_2=X_1-\frac{V}{c^2-v_{1x}V}(v_{1y}Y_1+v_{1z}Z_1)$$

$$Y_2=\frac{Y_1}{\gamma\{1-(v_{1x}V/c^2)\}}$$

$$Z_2=\frac{Z_1}{\gamma\{1-(v_{1x}V/c^2)\}}$$

$$\vec{F}=\frac{d\vec{p}}{dt}$$

$$\vec{F}_1=X_1\mathbf{i}+Y_1\mathbf{j}+Z_1\mathbf{k}$$

$$\vec{F}_2=X_2\mathbf{i}+Y_2\mathbf{j}+Z_2\mathbf{k}$$

Fizikçiler Mo yerine MeV verirler.
Bunun aslı M_0c^2 = ~ MeV'dir.

PROBLEMS

7-1 A K meson traveling through the laboratory breaks up into two π mesons. One of the π mesons is left at rest. What was the energy of the K? What is the energy of the remaining π meson? (Rest mass of K meson = 494 MeV; rest mass of π meson $\simeq$ 137 MeV.)

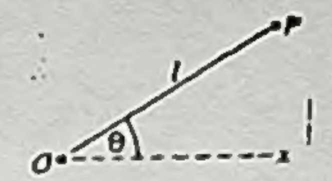
7-2 An electron-positron pair can be produced by a γ ray striking a stationary electron:

$$\gamma + e^- \rightarrow e^- + e^+ + e^-$$

What is the minimum γ-ray energy that will make this process go?

7-3 Suppose that a certain accelerator can give protons a kinetic energy of 200 GeV. The rest mass m_0 of a proton is 0.938 GeV. Calculate the largest possible rest mass M_0 of a particle X that could be produced by the impact of one of these high-energy protons on a stationary proton in the following process:

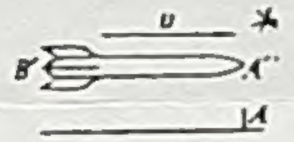
$$p + p \rightarrow p + p + X$$



4-15 A flash of light is emitted at point O and is later reabsorbed at point P (see the figure). In frame S, the line OP has a length l and makes an angle θ with the x axis. In a frame S' moving relative to S with a constant velocity v along the x axis:

(a) How much time τ' elapses between emission and absorption of the light?

(b) What is the spatial separation l' between the point of emission and the point of absorption of the light?



4-5 A rocketship of proper length l_0 travels at constant velocity v relative to a frame S (see the figure). The nose of the ship (A') passes the point A in S at $t = t' = 0$, and at this instant a light signal is sent out from A' to B'.

(a) When, by rocketship time (t'), does the signal reach the tail (B') of the ship?

(b) At what time t_1, as measured in S, does the signal reach the tail (B') of the ship?

(c) At what time t_2, as measured in S, does the tail of the ship (B') pass the point A?

4-11 A beam of unstable K^+ mesons, traveling at a speed of $c\sqrt{3}/2$, passes through two counters 9 m apart. The particles suffer a negligible loss of speed and energy in passing through the counters but give electrical pulses that can be counted. It is observed that 1000 counts are recorded in the first counter and 250 in the second. Assuming that this whole decrease is due to decay of the particles in flight, what is their half-life as measured in their own rest frame?

32-5 **5** Suppose superior beings on a planet near Alpha Centauri, which is 4.3 × 10^{16} m away, send a spaceship to us at a speed of .9990c. It is contaminated by a pair of microbes which reproduce on earth in such a way that the population doubles every 6.4 × 10^3 s. How many microbes will be on board when it hits the earth?

8 The straight-line distance between the earth and the star Alpha Centauri is about 4.3 × 10^{16} m. Suppose a spaceship could be sent to the star with a speed of 2 × 10^8 m/s. (a) How long will the trip take according to earth clocks? (b) How large a time will the spaceship's clocks record this journey to take? (c) How large will the spaceship's occupants measure the earth to star distance to be? (d) How fast will the spaceship's occupants compute their speed to be from the results of (b) and (c)?

4-6 A rocketship of length 100 m, traveling at v/c = 0.6, carries a radio receiver at its nose. A radio pulse is emitted from a stationary space station just as the tail of the rocket passes by.

(a) How far from the space station is the nose of the rocket at the instant of arrival of the radio signal at the nose?

(b) By space-station time, what is the time interval between the arrival of this signal and its emission from the station?

(c) What is the time interval according to measurements in the rest frame of the rocket?

4-7 An electron (rest energy 0.51 MeV) is accelerated from rest through a voltage drop of 0.13 MV, and then travels at constant velocity (1 MV = 10^6 volts).

(a) How long does it take for the electron (after it has reached its final velocity) to travel between two points 8.4 m apart?

(b) What is the distance between the points as measured in the rest frame of the electron?

4-8 A flash of light is emitted at position x_1 on the x axis and is absorbed at position $x_2 = x_1 + l$. In a reference frame moving with velocity $v = \beta c$ along the x axis:

(a) What is the spatial separation l' between the point of emission and the point of absorption of the light?

(b) How much time elapses between the emission and the absorption of the light?

4-9 Two spaceships, each measuring 100 m in its own rest frame, pass by each other traveling in opposite directions. Instruments on spaceship A determine that the front end of spaceship B requires 5.00 × 10^{-6} sec to traverse the full length of A.

(a) What is the relative velocity of the two spaceships?

(b) A clock in the front end of B reads exactly one o'clock as it passes by the front end of A. What will the clock read as it passes by the rear end of A?

4-10 Charged π mesons (pions) are produced in high-energy collisions between protons and neutrons. They decay in their own rest frame according to the law

$$N(t) = N_0(2)^{-t/T}$$

where T is the half-life and is equal to 2 × 10^{-8} sec. A burst of pions is produced at the target of an accelerator, and it is observed that two-thirds of them survive at a distance of 30 m from the target. What is the energy of the pions? (Express it in terms of the rest-mass energy.)

4-12 At noon a rocketship passes the earth with a velocity 0.8c. Observers on the ship and on earth agree that it is noon.

(a) At 12:30 P.M. as read by a rocketship clock, the ship passes an interplanetary navigational station that is fixed relative to the earth and whose clocks read earth time. What time is it at the station?

(b) How far from earth (in earth coordinates) is the station?

(c) At 12:30 P.M. rocketship time the ship reports by radio back to earth. When (by earth time) does the earth receive the signal?

(d) The station on earth replies immediately. When (by rocket time) is the reply received?

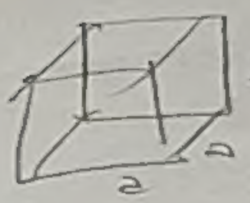
For maximum benefit, solve this problem from the standpoint of both the earth and the rocket frames.

(After J. H. Smith, *Introduction to Special Relativity*, Benjamin, New York, 1965.)

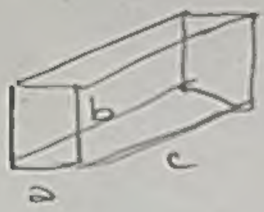
7.1. K'nın E_k=396MeV
π'nin E_k=616MeV
7.2. 2.04MeV (=$4m_0c^2$)
7.3. 17.6GeV
4.15a) $(1-\beta\cos\theta)\gamma\ell/c$, b) $(1-\beta\cos\theta)\gamma\ell$
4.5a) ℓ_0/c b) $\{(1-\beta)/(1+\beta)\}^{1/2}\,\ell_0/c$; $\ell_0/\gamma v$
4.11. 8.63E_0
4.6. a) 200m, b) 6.67×10^{-7} s, c) 3.33×10^{-7} s
4.7. a) 4.67×10^{-8} s, b) 6.7m
4.8. $\ell\{(1-\beta)/(1+\beta)\}^{1/2}$, $(1-\beta)\gamma\ell/c$

$I = 2, 4, 6, 8$

$d = \frac{a}{\sqrt{h^2+k^2+l^2}}$



$a = 4 A°$



$a = 4 A°$
$b = 4{,}32 A°$
$c = 4{,}16 A°$

$I, (h^2+k^2+l^2)$	(h k l) Cubic (a=b=c)	Ortorombik
2	1 1 0	1 1 0 / 1 0 1 / 0 1 1
4	2 0 0	2 0 0 / 0 2 0 / 0 0 2
6	2 1 1	
8	2 2 0	
10	3 1 0	

$$d_{110} = \frac{1}{\sqrt{\frac{h^2}{a^2}+\frac{k^2}{b^2}+\frac{l^2}{c^2}}} = \frac{1}{\sqrt{\left(\frac{1}{4}\right)^2+\left(\frac{1}{4{,}32}\right)^2}} = d_{110}$$

$$d_{101} = \frac{1}{\sqrt{}}$$

$2d_0 \sin\theta = n\lambda$

$\sin\theta = \frac{\lambda}{2d_{110}}$

	n
BCC	2
FCC	4
C	2

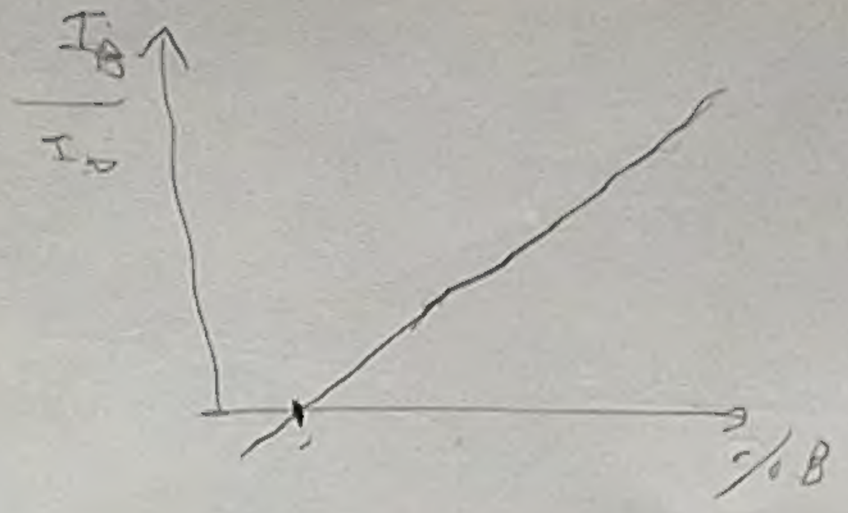
$$\rho = \frac{M}{V} = \frac{n \cdot \frac{63{,}5}{6{,}02 \cdot 10^{23}}}{a^3}$$

7,9

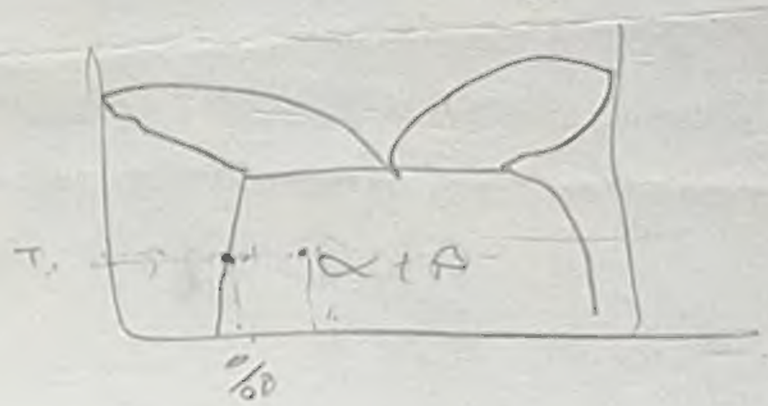
$2d \sin\theta = \lambda$

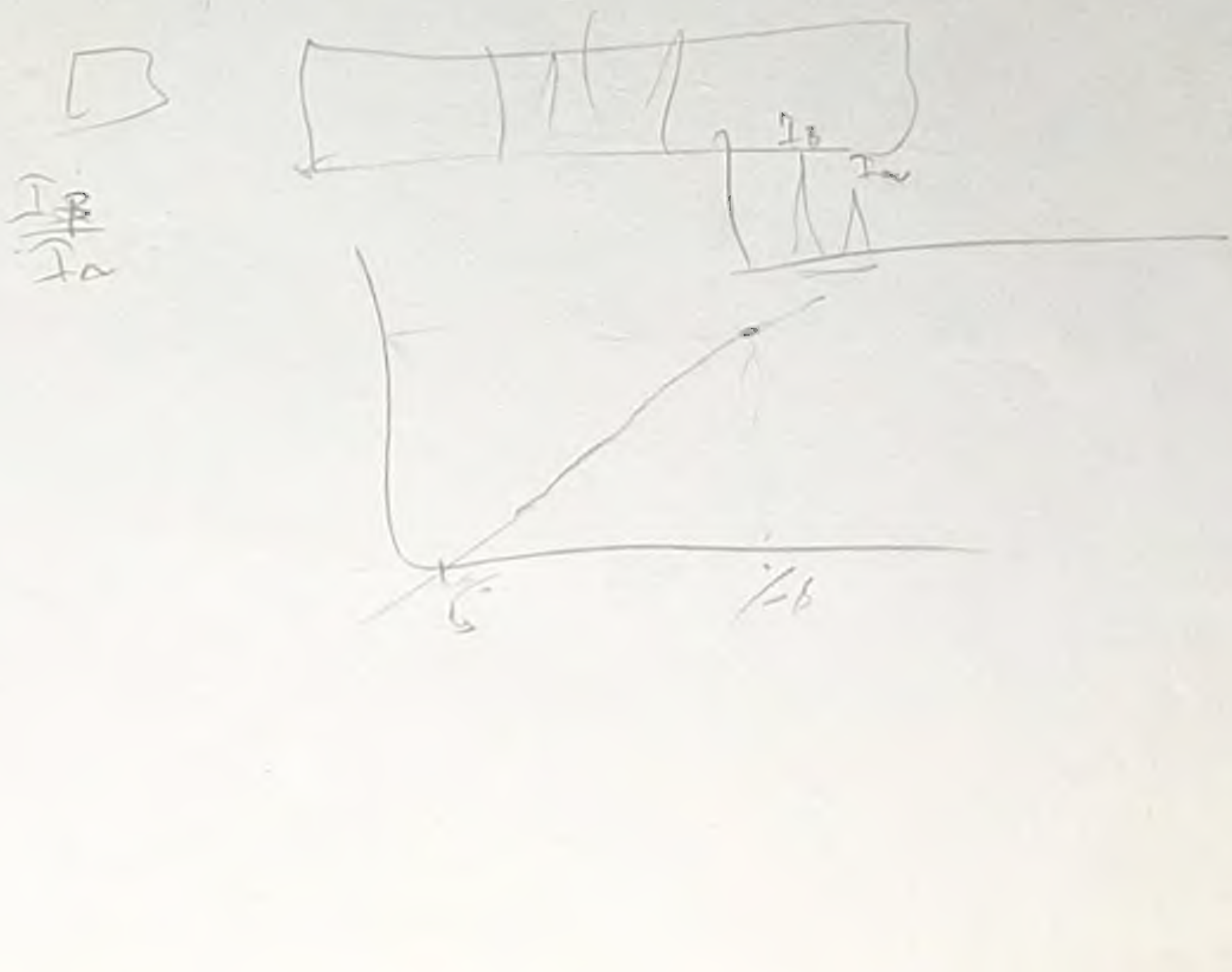
$d = \frac{a}{\sqrt{h^2+k^2+l^2}}$

$2 \cdot \frac{a}{\sqrt{h^2+k^2+l^2}} \sin\theta = \lambda$


I
I
%B

T


α+β
%B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Fizik Müh.

Bölüm 3

Enerji Düzeyleri

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Table I. Values of the Gauss Function*

Values of the function $\frac{1}{\sqrt{2\pi}} e^{-t^2/2}$ are given for various values of t.

Each figure in the body of the table is preceded by a decimal point.

t	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	39894	39892	39886	39876	39862	39844	39822	39797	39767	39733
0.1	39695	39654	39608	39559	39505	39448	39387	39322	39253	39181
0.2	39104	39024	38940	38853	38762	38667	38568	38466	38361	38251
0.3	38139	38023	37903	37780	37654	37524	37391	37255	37115	36973
0.4	36827	36678	36526	36371	36213	36053	35889	35723	35553	35381
0.5	35207	35029	34849	34667	34482	34294	34105	33912	33718	33521
0.6	33322	33121	32918	32713	32506	32297	32086	31874	31659	31443
0.7	31225	31006	30785	30563	30339	30114	29887	29658	29430	29200
0.8	28969	28737	28504	28269	28034	27798	27562	27324	27086	26848
0.9	26609	26369	26129	25888	25647	25406	25164	24923	24681	24439
1.0	24197	23955	23713	23471	23230	22988	22747	22506	22265	22025
1.1	21785	21546	21307	21069	20831	20594	20357	20121	19886	19652
1.2	19419	19186	18954	18724	18494	18265	18037	17810	17585	17360
1.3	17137	16915	16694	16474	16256	16038	15822	15608	15395	15183
1.4	14973	14764	14556	14350	14146	13943	13742	13542	13344	13147
1.5	12952	12758	12566	12376	12188	12001	11816	11632	11450	11270
1.6	11092	10915	10741	10567	10396	10226	10059	09893	09728	09566
1.7	09405	09246	09089	08933	08780	08628	08478	08329	08183	08038
1.8	07895	07754	07614	07477	07341	07206	07074	06943	06814	06687
1.9	06562	06438	06316	06195	06077	05959	05844	05730	05618	05508
2.0	05399	05292	05186	05082	04980	04879	04780	04682	04586	04491
2.1	04398	04307	04217	04128	04041	03955	03871	03788	03706	03626
2.2	03547	03470	03394	03319	03246	03174	03103	03034	02965	02898
2.3	02833	02768	02705	02643	02582	02522	02463	02406	02349	02294
2.4	02239	02186	02134	02083	02033	01984	01936	01888	01842	01797
2.5	01753	01709	01667	01625	01585	01545	01506	01468	01431	01394
2.6	01358	01323	01289	01256	01223	01191	01160	01130	01100	01071
2.7	01042	01014	00987	00961	00935	00909	00885	00861	00837	00814
2.8	00792	00770	00748	00727	00707	00687	00668	00649	00631	00613
2.9	00595	00578	00562	00545	00530	00514	00499	00485	00470	00457
3.0	00443									
3.5	008727									
4.0	0001338									
4.5	0000160									
5.0	000001487									

* This table was adapted, by permission, from F. C. Kent, "Elements of Statistics," McGraw-Hill Book Company, Inc., New York, 1924.

A more complete table is "Tables of Normal Probability Functions," National Bureau of Standards, Washington, 1953.

Table II. Integrals of the Gauss Function*

Values of the integral $\frac{1}{\sqrt{2\pi}} \int_0^T e^{-t^2/2}\, dt$ are given for various values of T. To evaluate Eq. (9.22) in the text, use the relation

$$\frac{1}{\sqrt{2\pi}} \int_{-T}^{T} e^{-t^2/2}\, dt = 2 \frac{1}{\sqrt{2\pi}} \int_0^T e^{-t^2/2}\, dt$$

A related function which is sometimes used is erf z, defined by

$$\operatorname{erf} z = \frac{1}{\sqrt{\pi}} \int_{-z}^{z} e^{-x^2}\, dx$$

The values given here are equal to ½ erf $(T/\sqrt{2})$.

Each figure in the body of the table is preceded by a decimal point.

T	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	00000	00399	00798	01197	01595	01994	02392	02790	03188	03586
0.1	03983	04380	04776	05172	05567	05962	06356	06749	07142	07535
0.2	07926	08317	08706	09095	09483	09871	10257	10642	11026	11409
0.3	11791	12172	12552	12930	13307	13683	14058	14431	14803	15173
0.4	15542	15910	16276	16640	17003	17364	17724	18082	18439	18793
0.5	19146	19497	19847	20194	20450	20884	21226	21566	21904	22240
0.5	22575	22907	23237	23565	23891	24215	24537	24857	25175	25490
0.7	25804	26115	26424	26730	27035	27337	27637	27935	28230	28524
0.8	28814	29103	29389	29673	29955	30234	30511	30785	31057	31327
0.9	31594	31859	32121	32381	32639	32894	33147	33398	33646	33891
1.0	34134	34375	34614	34850	35083	35313	35543	35769	35993	36214
1.1	36433	36650	36864	37076	37286	37493	37698	37900	38100	38298
1.2	38493	38686	38877	39065	39251	39435	39617	39796	39973	40147
1.3	40320	40490	40658	40824	40988	41149	41308	41466	41621	41774
1.4	41924	42073	42220	42364	42507	42647	42786	42922	43056	43189
1.5	43319	43448	43574	43699	43822	43943	44062	44179	44295	44408
1.6	44520	44630	44738	44845	44950	45053	45154	45254	45352	45449
1.7	45543	45637	45728	45818	45907	45994	46080	46164	46246	46327
1.8	46407	46485	46562	46638	46712	46784	46856	46926	46995	47062
1.9	47128	47193	47257	47320	47381	47441	47500	47558	47615	47670
2.0	47725	47778	47831	47882	47932	47982	48030	48077	48124	48169
2.1	48214	48257	48300	48341	48382	48422	48461	48500	48537	48574
2.2	48610	48645	48679	48713	48745	48778	48809	48840	48870	48899
2.3	48928	48956	48983	49010	49036	49061	49086	49111	49134	49158
2.4	49180	49202	49224	49245	49266	49286	49305	49324	49343	49361
2.5	49379	49396	49413	49430	49446	49461	49477	49492	49506	49520
2.6	49534	49547	49560	49573	49585	49598	49609	49621	49632	49643
2.7	49653	49664	49674	49683	49693	49702	49711	49720	49728	49736
2.8	49744	49752	49760	49767	49774	49781	49788	49795	49801	49607
2.9	49813	49819	49825	49831	49836	49841	49846	49851	49856	49861
3.0	49865									
3.5	4997674									
4.0	4999683									
4.5	4999966									
5.0	4999997133									

* This table was adapted, by permission, from F. C. Kent, "Elements of Statistics," McGraw-Hill Book Company, Inc., New York, 1924.

A more complete table is "Tables of Normal Probability Functions," National Bureau of Standards, Washington, 1953.

Table III. Maximum Deviations for Chauvenet's Criterion

For each value of N (N = number of observations) the table gives the value of d_i/σ such that the probability of occurrence of deviations *larger than* the given value is $1/2N$.

N	d_i/σ	N	d_i/σ
5	1.65	30	2.39
6	1.73	40	2.49
7	1.80	50	2.57
8	1.86	60	2.64
9	1.91	80	2.74
10	1.96	100	2.81
12	2.04	150	2.93
14	2.10	200	3.02
16	2.15	300	3.14
18	2.20	400	3.23
20	2.24	500	3.29
25	2.33	1000	3.48

Table IV. Values of χ^2*

The table gives values of χ^2 which have various probabilities of being *exceeded* by a sample taken from the given parent distribution. The number of degrees of freedom is ν. To illustrate: For a sample with 10 degrees of freedom, the probability is 0.99 that it will have $\chi^2 \geq 2.558$ and 0.001 that $\chi^2 \geq 29.588$.

ν	Probability										
	0.99	0.98	0.95	0.90	0.80	0.20	0.10	0.05	0.02	0.01	0.001
1	0.0^4157	0.0^6628	0.00393	0.0158	0.0642	1.642	2.706	3.841	5.412	6.635	10.827
2	0.0201	0.0404	0.103	0.211	0.446	3.219	4.605	5.991	7.824	9.210	13.815
3	0.115	0.185	0.352	0.584	1.005	4.642	6.251	7.815	9.837	11.341	16.268
4	0.297	0.429	0.711	1.064	1.649	5.989	7.779	9.488	11.668	13.277	18.465
5	0.554	0.752	1.145	1.610	2.343	7.289	9.236	11.070	13.388	15.086	20.517
6	0.872	1.134	1.635	2.204	3.070	8.558	10.645	12.592	15.033	16.812	22.457
7	1.239	1.564	2.167	2.833	3.822	9.803	12.017	14.067	16.622	18.475	24.322
8	1.646	2.032	2.733	3.490	4.594	11.030	13.362	15.507	18.168	20.090	26.125
9	2.088	2.532	3.325	4.168	5.380	12.242	14.684	16.919	19.679	21.666	27.877
10	2.558	3.059	3.940	4.865	6.179	13.442	15.987	18.307	21.161	23.209	29.588
11	3.053	3.609	4.575	5.578	6.989	14.631	17.275	19.675	22.618	24.725	31.264
12	3.571	4.178	5.226	6.304	7.807	15.812	18.549	21.026	24.054	26.217	32.909
13	4.107	4.765	5.892	7.042	8.634	16.985	19.812	22.362	25.472	27.688	34.528
14	4.660	5.368	6.571	7.790	9.467	18.151	21.064	23.685	26.873	29.141	36.123
15	5.229	5.985	7.261	8.547	10.307	19.311	22.307	24.996	28.259	30.578	37.697
16	5.812	6.614	7.962	9.312	11.152	20.465	23.542	26.296	29.633	32.000	39.252
17	6.408	7.255	8.672	10.085	12.002	21.615	24.769	27.587	30.995	33.409	40.790
18	7.015	7.906	9.390	10.865	12.857	22.760	25.989	28.869	32.346	34.805	42.312
19	7.633	8.567	10.117	11.651	13.716	23.900	27.204	30.144	33.687	36.191	43.820
20	8.260	9.237	10.851	12.443	14.578	25.038	28.412	31.410	35.020	37.566	45.315
21	8.897	9.915	11.591	13.240	15.445	26.171	29.615	32.671	36.343	38.932	46.797
22	9.542	10.600	12.338	14.041	16.314	27.301	30.813	33.924	37.659	40.289	48.268
23	10.196	11.293	13.091	14.848	17.187	28.429	32.007	35.172	38.968	41.638	49.728
24	10.856	11.992	13.848	15.659	18.062	29.553	33.196	36.415	40.270	42.980	51.179
25	11.524	12.697	14.611	16.473	18.940	30.675	34.382	37.652	41.566	44.314	52.620
26	12.198	13.409	15.379	17.292	19.820	31.795	35.563	38.885	42.856	45.642	54.052
27	12.879	14.125	16.151	18.114	20.703	32.912	36.741	40.113	44.140	46.963	55.476
28	13.565	14.847	16.928	18.939	21.588	34.027	37.916	41.337	45.419	48.278	56.893
29	14.256	15.574	17.708	19.768	22.475	35.139	39.087	42.557	46.693	49.588	58.302
30	14.953	16.306	18.493	20.599	23.364	36.250	40.256	43.773	47.962	50.892	59.703

* This table is reproduced in abridged form from Table IV of Fisher and Yates, "Statistical Tables for Biological, Agricultural, and Medical Research," published by Oliver & Boyd, Ltd., Edinburgh, by permission of the authors and publishers.

BOATS LEAVING THE HARBOR BY MONET

Ranitab®

1991

OCAK

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

ŞUBAT

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MART

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NİSAN

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAYIS

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

HAZİRAN

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

TEMMUZ

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AĞUSTOS

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

EYLÜL

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

EKİM

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

KASIM

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

ARALIK

P.TESİ	SALI	ÇARŞ	PERŞ	CUMA	C.TESİ	PAZAR
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Ra
Peptik
Ranitab Ülker
hakiki manada

Peptik ülser tedavisinde

Ranitab®

150 mg / 300 mg

Ranitidin HCl — TABLET

"DÜNYADA EN ÇOK YAZILAN H_2-RESEPTÖR ANTAGONİSTİ"

ÇÜNKÜ:

1 ETKİNDİR
- Duodenal ve gastrik ülserlerde tam iyileşme sağlar.
- Ülser nüksünü önler.

2 DENENMİŞTİR
- ...1981'den beri 150 milyonu aşkın peptik ülserli hastaya uygulanmış olup, elde edilen başarılı sonuçlar dünya literatürlerine geçmiştir.

3 GÜVENLİDİR
- Anti-androjenik etki göstermez.
- Diğer ilaçlarla interaksiyona girmez.
- Mental konfüzyona sebep olmaz.

BİLEŞİMİ:
Beher Film Tablet 150 mg ya da 300 mg Ranitidin (hidroklorür olarak) içerir. RANİTAB'ın etkin maddesi olan Ranitidin, güçlü bir Histamin2 reseptör antagonistidir.

ENDİKASYONLARI:
Duodenum ülseri, mide ülseri, anastamoz ülser, ulcus ventriculi ve ulcus düodoninin rezidiv profilaksisinde, refluks ösofajiti ve Zollinger-Ellison sendromunda, tek dozla doğum esnasındaki asid aspirasyonunun önlenmesinde kullanılır.

DOZAJ VE UYGULAMA:
RANİTAB-150 mg tablet sabah-akşam bir tablet veya gece yatarken iki tablet uygulanır. Uygulama 4-8 hafta sürdürülür.

Ülser tamamen iyileştikten sonra nüksleri önlemek amacıyla RANİTAB 150 mg tablet'ingünde bir kez gece yatarken uygulanması ile idame tedavisi sürdürülür.
RANİTAB 300 mg tablet duodenum ülseri ve selim mide ülseri tedavisinde gece yatarken tek doz şeklinde uygulanır.

KONTRENDİKASYONLARI:
14 yaşından küçük çocuklar, hamileler ve emzikli kadınlarda yeterli araştırmalar tamamlanmadığından, bu şahıslara verilmemelidir.

YAN TESİRLERİ:
RANİTAB kullanımı ile bazı şahıslarda nadiren geçici baş ağrısı, ishal, deri döküntüsü, yorgunluk hissi veya baş dönmesi gibi belirtiler görülebilir. Plasma kreatinin değerlerinde ve serum transaminaz düzeyinde hafif yükselmeler meydana gelmekte ancak bu belirtiler kural olarak tedavi sürdürüldüğünde kaybolmaktadır.
Ranitidin tedavisi altında olanlarda çok nadiren hepatitis oluşabilmektedir. Ender olarak jinekomasti, amenore, cinsel davranış bozuklukları (libido kaybı, potens azalması) yaptığı bildirilmiş ise de görülme sıklığı genel populasyondan farklı değildir.

DİKKAT EDİLECEK HUSUSLAR:
Gastrik ülser vakalarında ilaç kullanılmadan önce bir habaset olup olmadığı kontrol edilmelidir. Böbrek fonksiyonlarının bozuk olması halinde doz azaltılmalıdır. Hepatik disfonksiyon mevcudiyetinde dikkatli davranılmalıdır.

TİCARİ ŞEKLİ:
RANİTAB-150; Beheri 150 mg Ranitidin içeren 60 Film Tablet
RANİTAB-300; Beheri 300 mg Ranitidin içeren 30 Film Tablet

Ayrıntılı bilgi için:
DEVA HOLDİNG A.Ş. Gayrettepe-İstanbul
Tel. 175 27 00 (15 hat)

DEVA HOLDİNG A.Ş.

NXN lattice

1 iteration = Spin flip (N^2 times)

Ortalama olarak her spini 1 kere döndürdüğümde 1 iterasyon yapmış olurum.
(Her spinin dönmesi şart değil. Ancak N^2 kadar yapacağız)

$B \neq 0$ olduğunda spinler alan yönünde dönmeye çalışacağından kritik nokta bulunması [illegible]. Ancak $B << $ alınarak işlem yapılır.

M.C. (non eq. or eq.) finds possible states or configurations of the system in eq. or observe the system in time

N × N system or lattice

eq.: time av. ≡ ensemble average ($t \to \infty$)

1. start with a random (disordered) or ordered pr. st.
2. go to a lattice point (randomly or sequentially)
3. calculate the change (ΔE) in the energy of the system when the spin is flipped & not flipped
4. (if $\Delta E < 0$ flip them)
   if $e^{-\Delta E/kT} \leq$ random number $\to$ no flip
   $e^{-\Delta E/kT} >$ random number $\Rightarrow$ flip
5. $N \times N$ flips (in one average) $\to$ 1 MCS
6. [illegible] $\Rightarrow$ av. [illegible], av. [illegible]

$\downarrow$ C_V, BC

$\downarrow$ χ_T ...

MMMMMMMMMMM

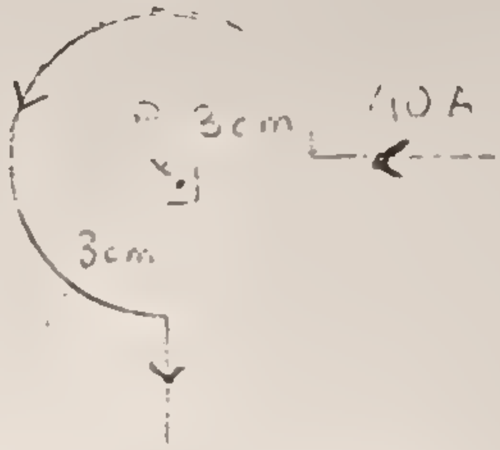
1. 500J of work against electrical forces is required to carry a 40C charge from one point to another. What is the potential difference (in volts) between these points?

A) 12.50 B) 20.00 C) 0.08 D) 40.00
E) it depends on path

2. A current of i=1A passes through the section of circuit AB in the direction shown, If R=5Ω and the potential difference between A and B, $V_A - V_B = 50V$, what is the emf (in volts) and polarity of element C? (Assume that C has ño internal resistance)

A) 45 B negative
B) 45 B positive
C) 55 B negative
D) 55 B positive
E) 50 B negative

3. The wire shown in the figure, carries a current of 40A. What is the magnetic field (in mT) at point P?

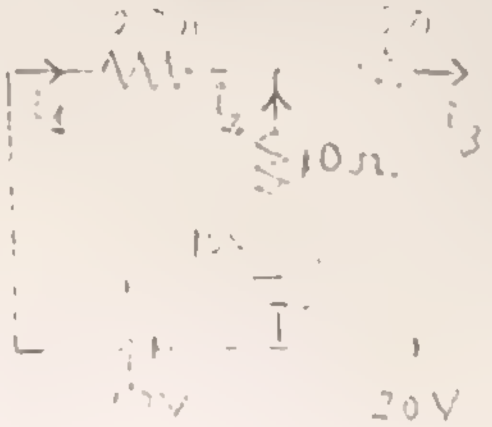


A) 8.0 B) 6.0 C) 1.5
D) 0.8 E) 0.6

4. A current of 3.0A flows through a wire that has a 0.20cm diameter. The wire is 1.5m long and the potential difference between its ends is 30V. What is the resistivity (in Ω.m) of the wire?

A) 90×10^{-6} B) 45×10^{-6} C) 180×10^{-6}
D) 20×10^{-6} E) 80×10^{-6}

5. In the circuit given, which of the following equation(s) is (are) correct?



I. $i_1 + i_2 = i_3$
II. $2i_1 = i_2$
III. $2i_2 + i_3 = 6$

A) I B) II C) I and II D) II and III
E) I,II and III

1) Leventin Programı ile:

10x10'luk bir sistemde

NRUN=0
NITER=10000
ITER=1
IHEAT=500

2) Leventin Programı ile:

20x20'lik bir sistemde

NRUN=0
NITER=10000
ITER=1
IHEAT=500

3) 20x20'lik bir sistemde

IHEAT=2000
ITER=2
NITER=5000

4) 40x40'lık bir sistemde;

IHEAT=4000
ITER=2
NITER=5000

SAMSUN

AR LİSESİ	Kale Mah. İnce Sok.	No. 13 SAMSUN	Tel.: (362) 432 02 15 - 432 02 16
AR FEN LİSESİ	Kale Mah. İnce Sok.	No. 13 SAMSUN	Tel.: (362) 432 02 15 - 432 02 16
AR İLKOKULU	Kale Mah. İnce Sok.	No. 13 SAMSUN	Tel.: (362) 432 02 15 - 432 02 16
AR DERSHANELERİ	[illegible]	No. [illegible] SAMSUN	Tel.: (362) 431 33 26 - 431 67 70
AR BİLGİSAYAR KURSU	[illegible]	No. [illegible] SAMSUN	Tel.: (362) 431 33 26 - 431 67 70

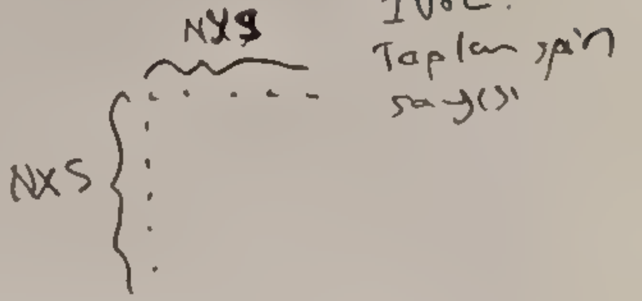
```
      [illegible]
   [illegible] FORMAT( [illegible] )
   [illegible] [illegible]
   [illegible] FORMAT( [illegible] )
      END

      SUBROUTINE INIT
      COMMON/BLK0/BETA,ISEED,IS(2000),SNORM,ENORM
      COMMON/BLK1/NXS,NYS,IVOL,NXTX(99),NXTY(99),LSTX(99),LSTY(99)
      IVOL = NXS * NYS
      DO 10 I = 1 , NXS
         NXTX(I) = 1
         LSTX(I) = -1
10       CONTINUE
      NXTX(NXS) = 1 - NXS
      LSTX(  1) = NXS - 1
      DO 20 I = 1 , NYS
         NXTY(I) = NXS
         LSTY(I) = -NXS
20    CONTINUE
      NXTY(NYS) = (1 - NYS) * NXS
      LSTY(  1) = (NYS - 1) * NXS
      DO 25 I = 1 , IVOL
         IS(I) = 1
25    CONTINUE
       SNORM = FLOAT(IVOL)
      ENORM = [illegible] SNORM
      END

       [illegible]
       [illegible]
      [illegible]
       [illegible]
       [illegible]
       [illegible]
       DO 10 IY = 1,NYS
        NYP = NXTY(IY)
        LYP = LSTY(IY)
        DO 10 IX = 1 , NXS
          NXP = NXTX(IX)
          LXP = LSTX(IX)
          IP = IP + 1
          ISPOLD= IS(IP)
          ENDIFF=-2*ISPOLD*(IS(IP+NXP)+IS(IP+LXP)+IS(IP+NYP)+IS(IP+LYP))
          IF ( EXP(BETA*ENDIFF) .GT. RAND(ISEED) ) ISPOLD = - ISPOLD
          IS(IP) = ISPOLD
10    CONTINUE
      END

      SUBROUTINE CALCUL(AVSPN,AVENR)
      COMMON/BLK0/BETA,ISEED,IS(2000),SNORM,ENORM
      COMMON/BLK1/NXS,NYS,IVOL,NXTX(99),NXTY(99),LSTX(99),LSTY(99)
      IP = 0
      SUMSPN = 0
      SUMENR = 0
      [illegible]
        NYP = NXTY(IY)
        LYP = LSTY(IY)
        DO 10 IX = 1, NXS
          NXP = NXTX(IX)
          LXP = LSTX(IX)
          IP = IP + 1
          ISPOLD=IS(IP)
          ENERGY=ISPOLD*(IS(IP+NXP)+IS(IP+LXP)+IS(IP+NYP)+IS(IP+LYP))
          SUMSPN=SUMSPN + ISPOLD
10    CONTINUE
```

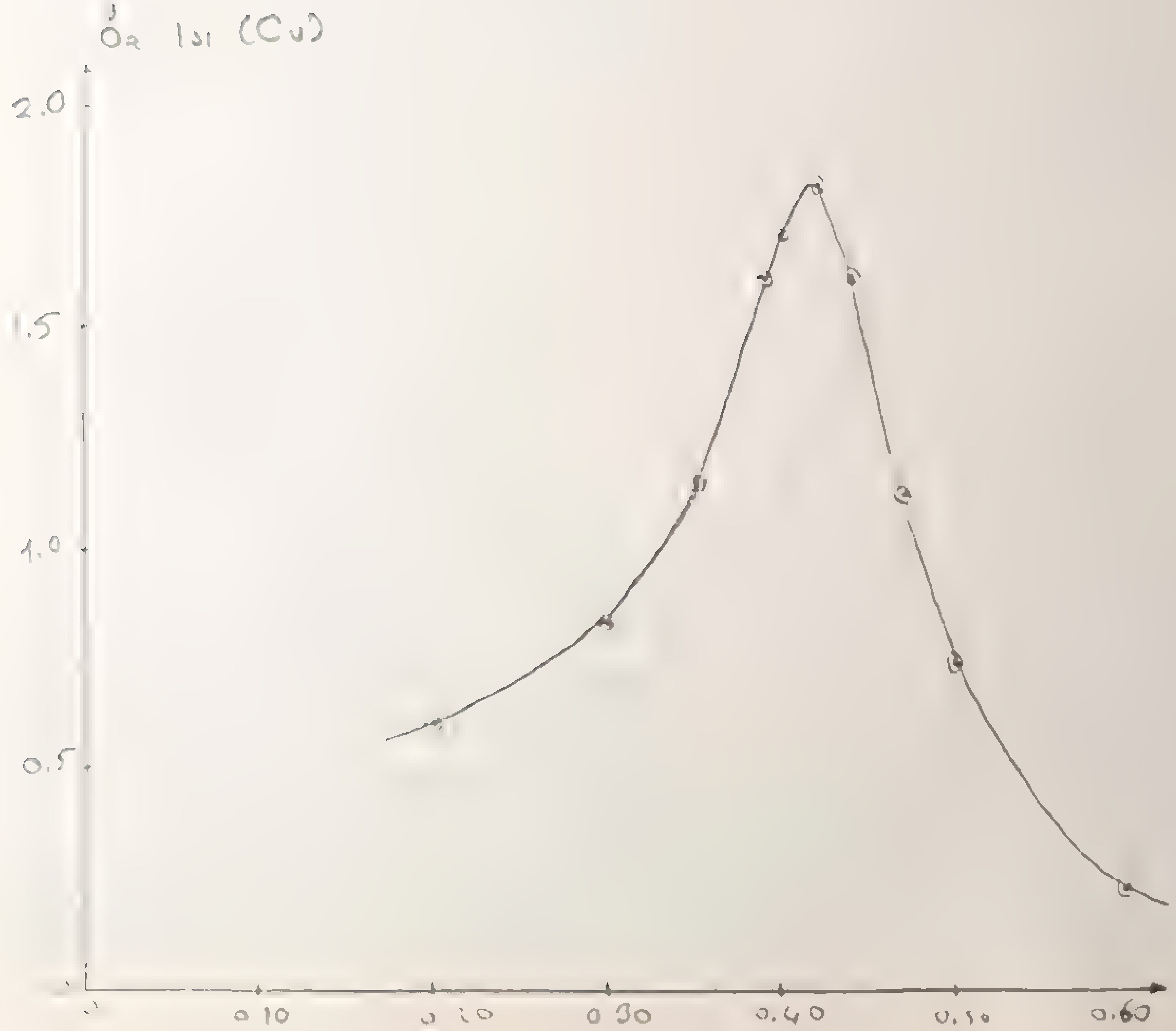
} periodic B.C.'s (beside the NXTX(NXS) and LSTX(1) lines)

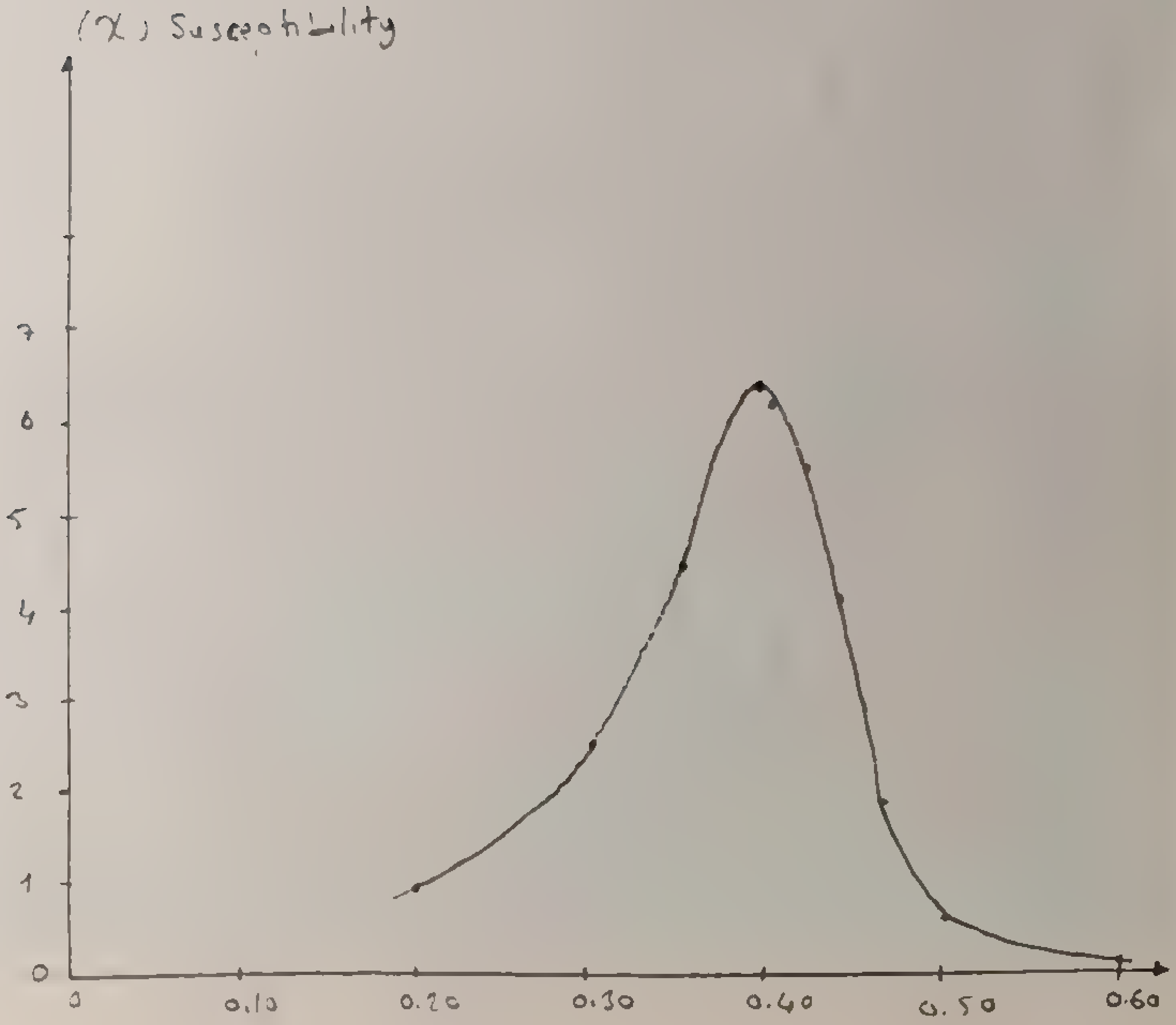


−ΔE ← (pointing to the ENDIFF line)

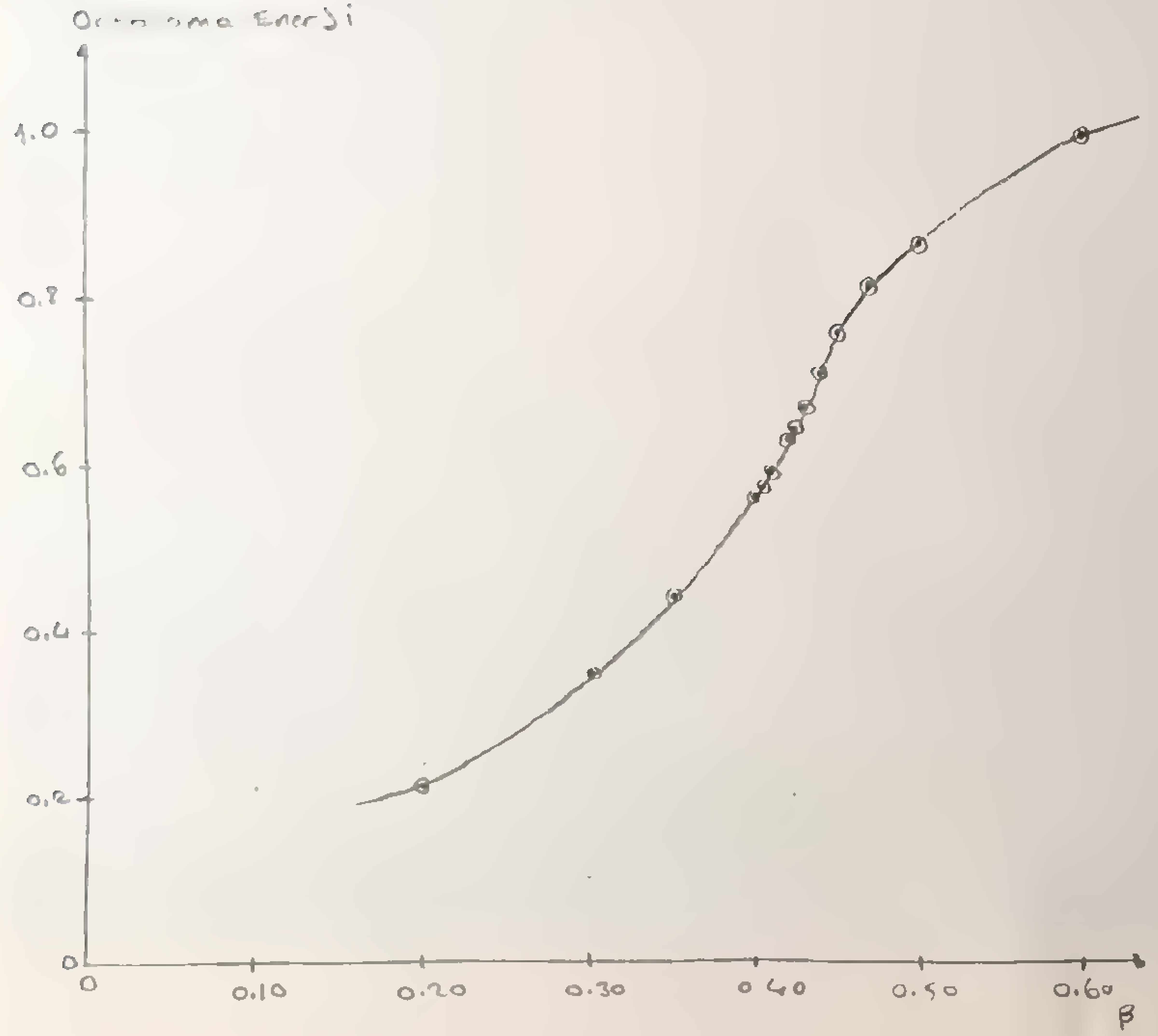
spin flip: $e^{-\Delta E/kT} >$ rand. number
$e^{-\Delta E/kT} \leq$ rand. number: no flip

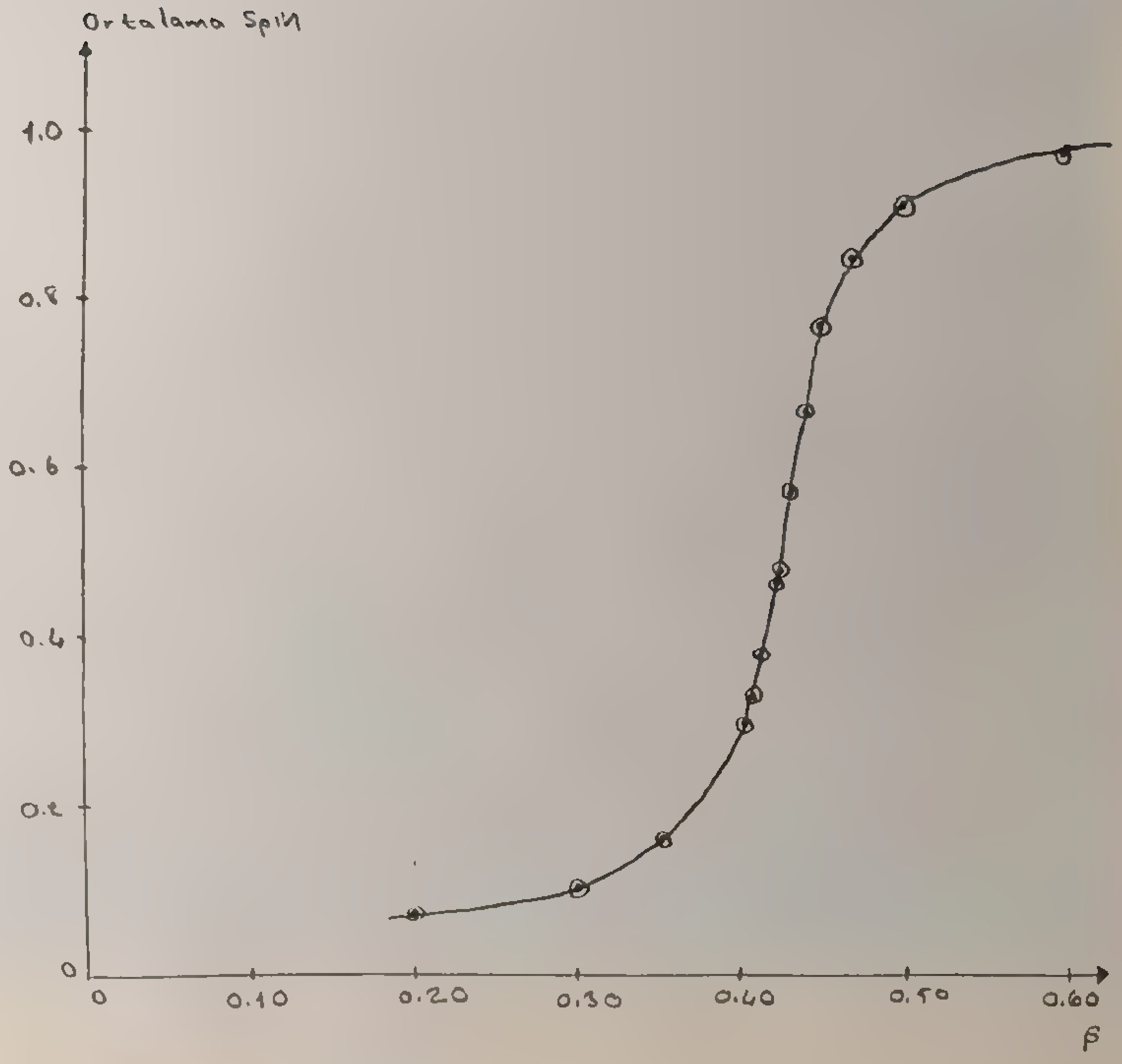
SUMSPN line → toplam spin
→ toplam enerji
{ ortalaması bütün spinler üzerinden


(Cu)
2.0
1.5
1.0
0.5
0.10
0.30
0.40
0.60

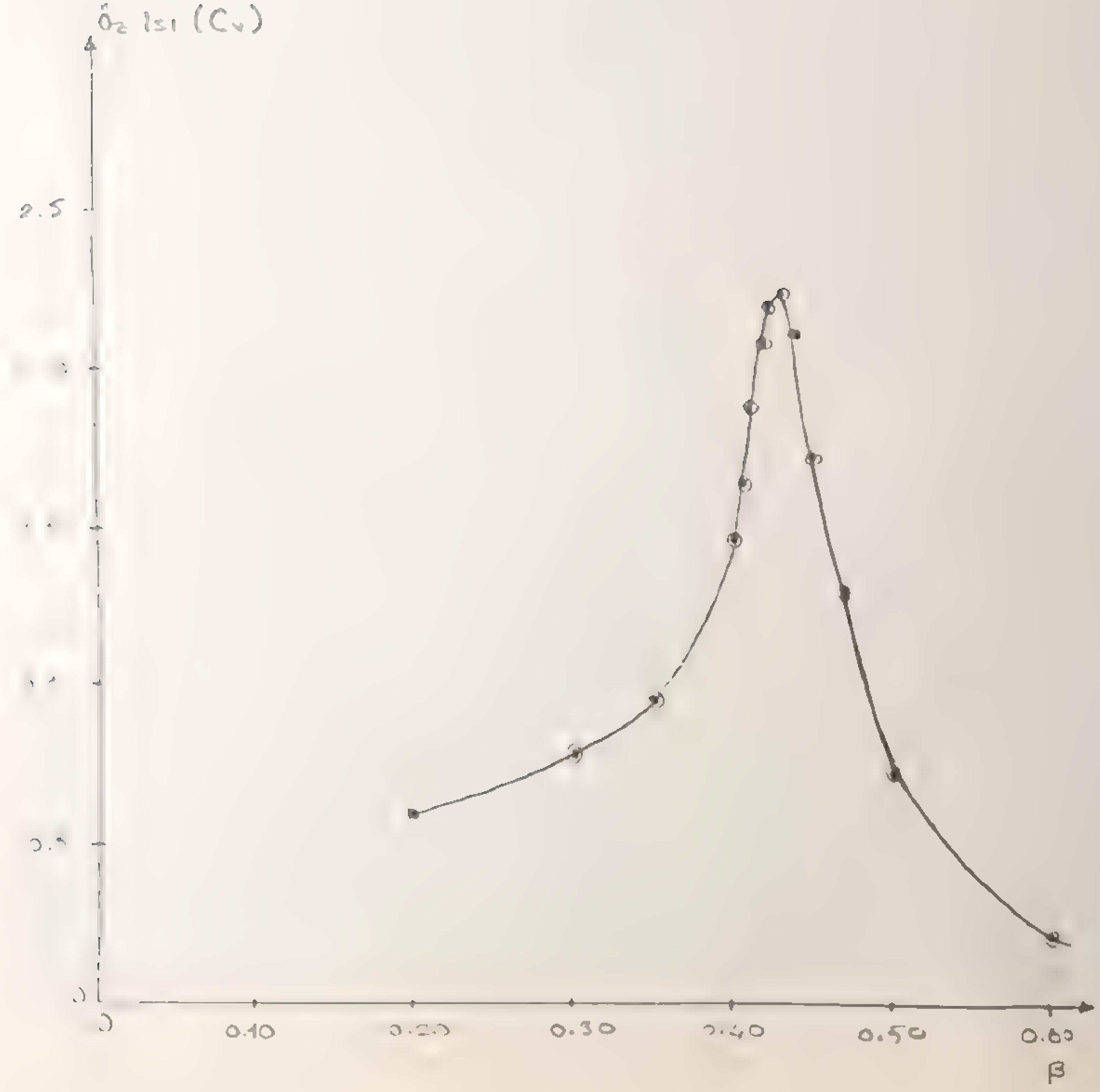

(χ) Susceptibility
7
6
5
4
3
2
1
0
0.10
0.20
0.30
0.40
0.50
0.60

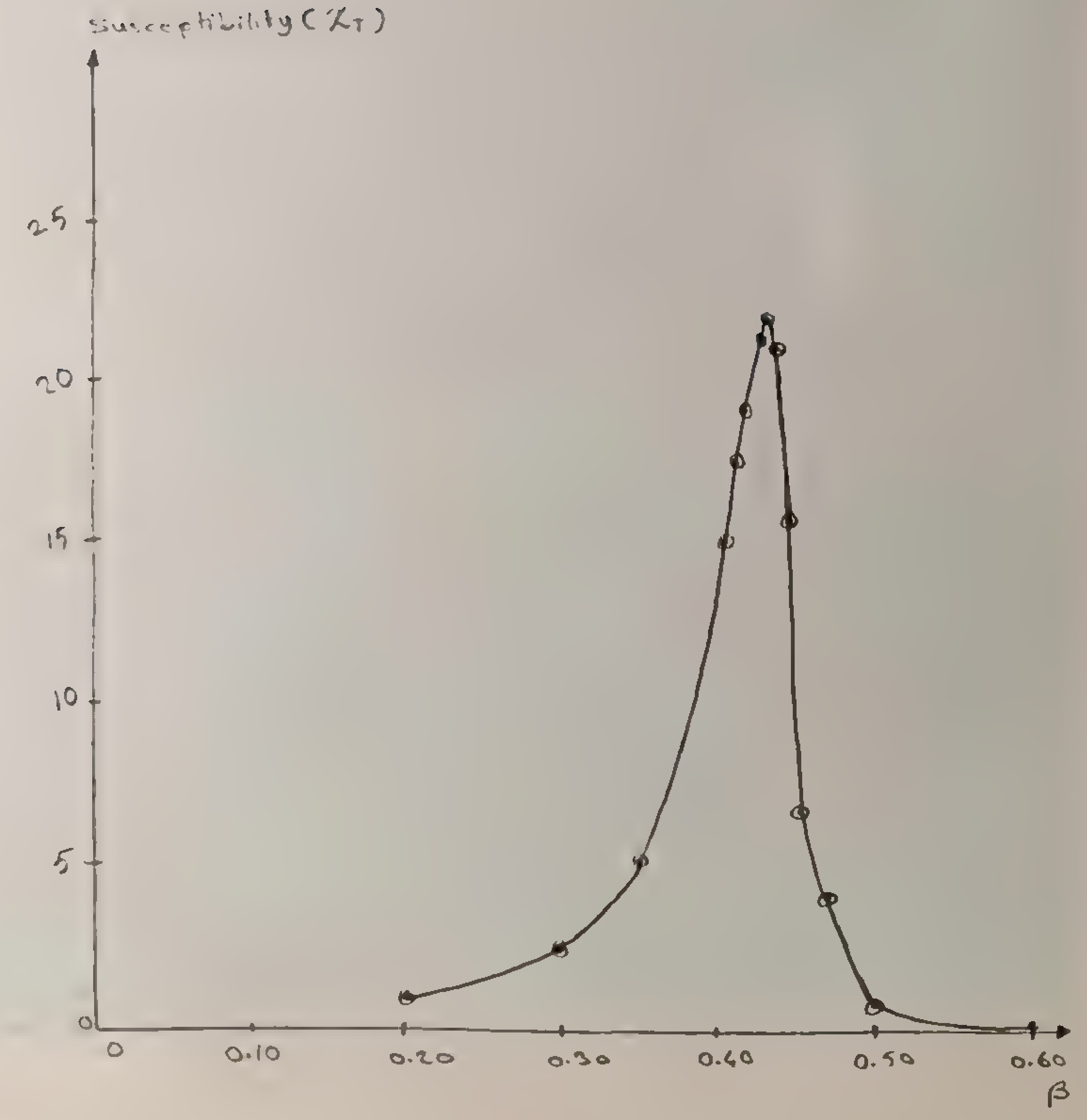
20X20 Latis için Grafikler





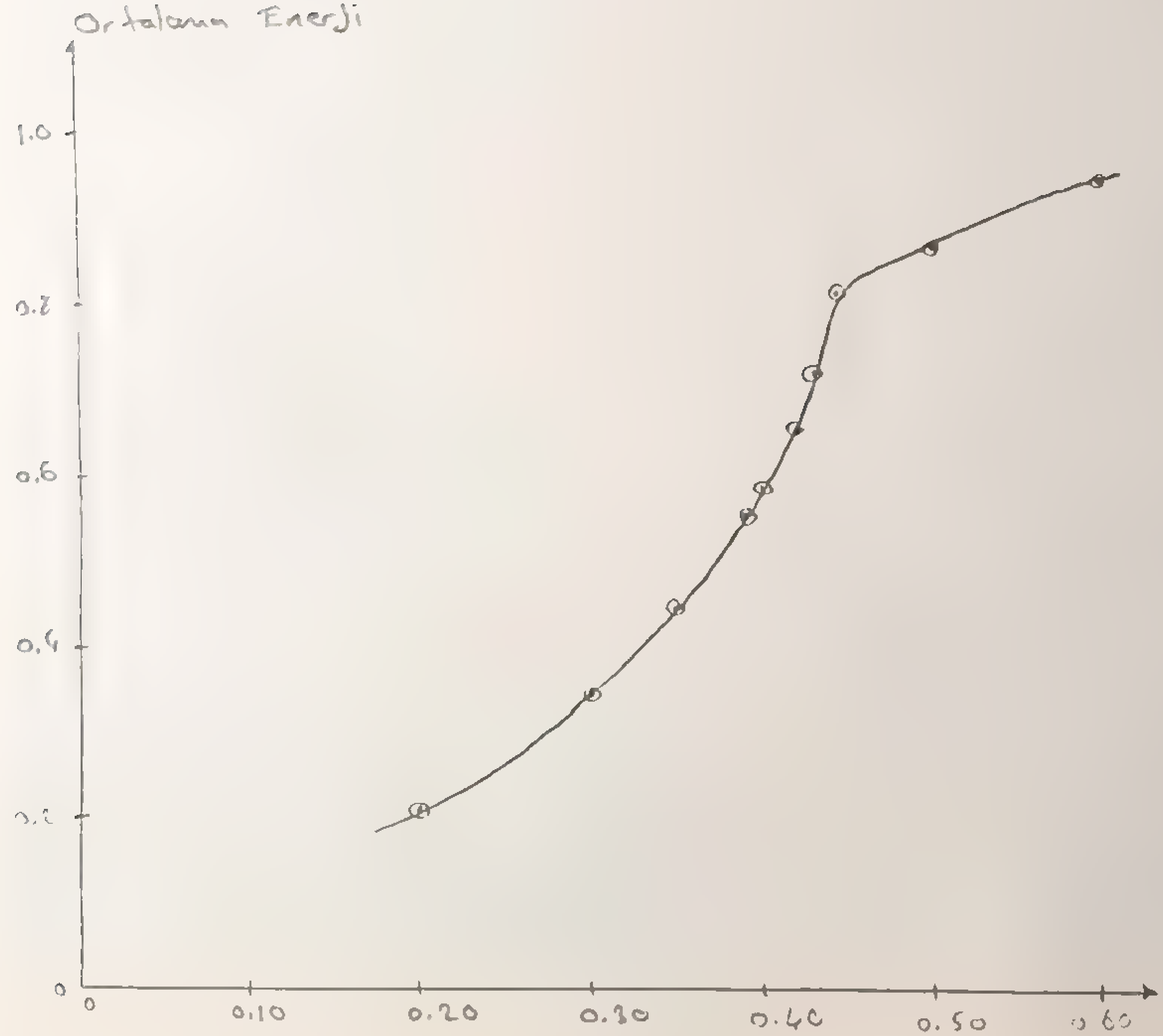
20x20 Latis için Grafikler

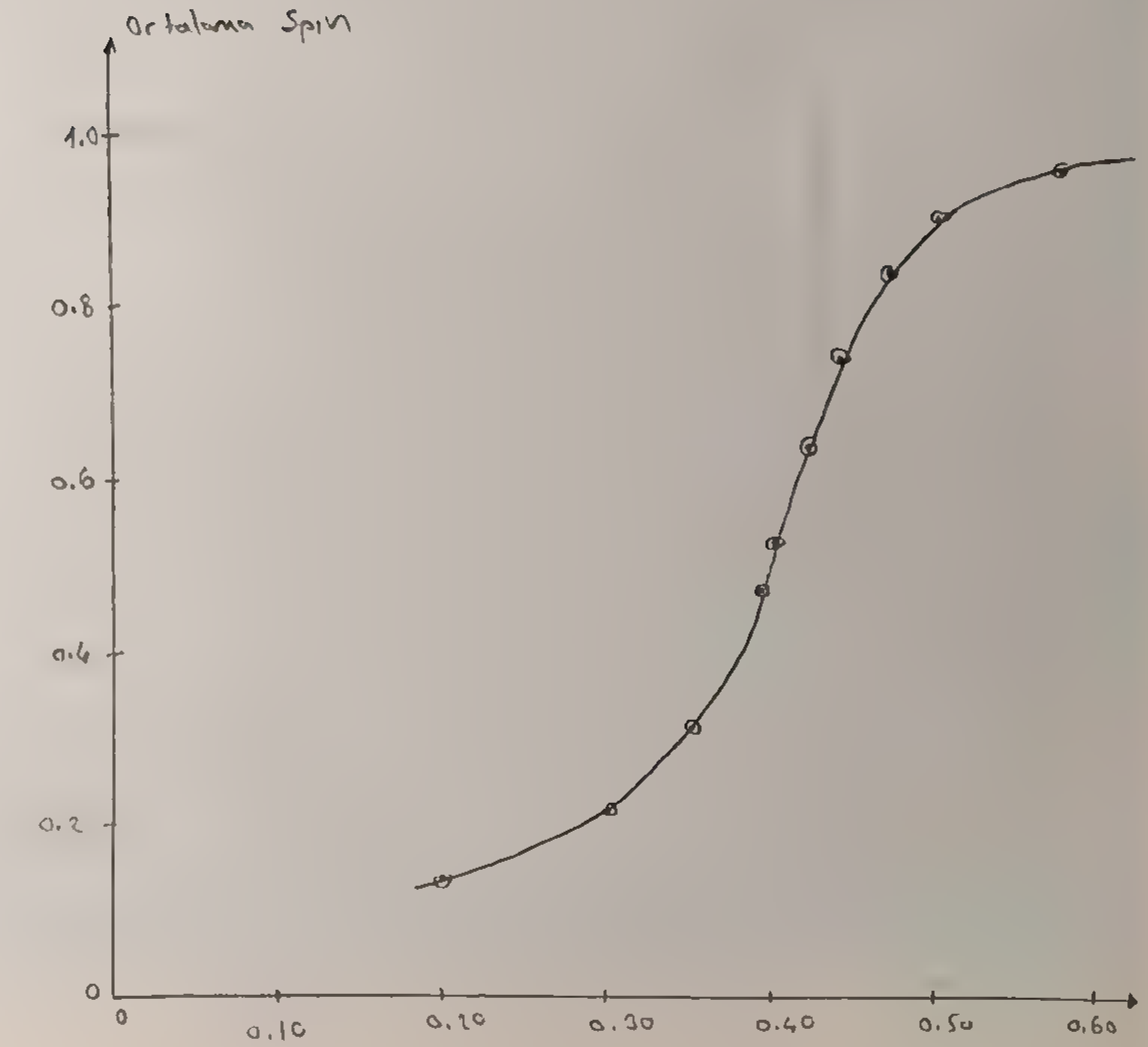




10 x 10 latis için grafikler

$\beta_{cr} =$





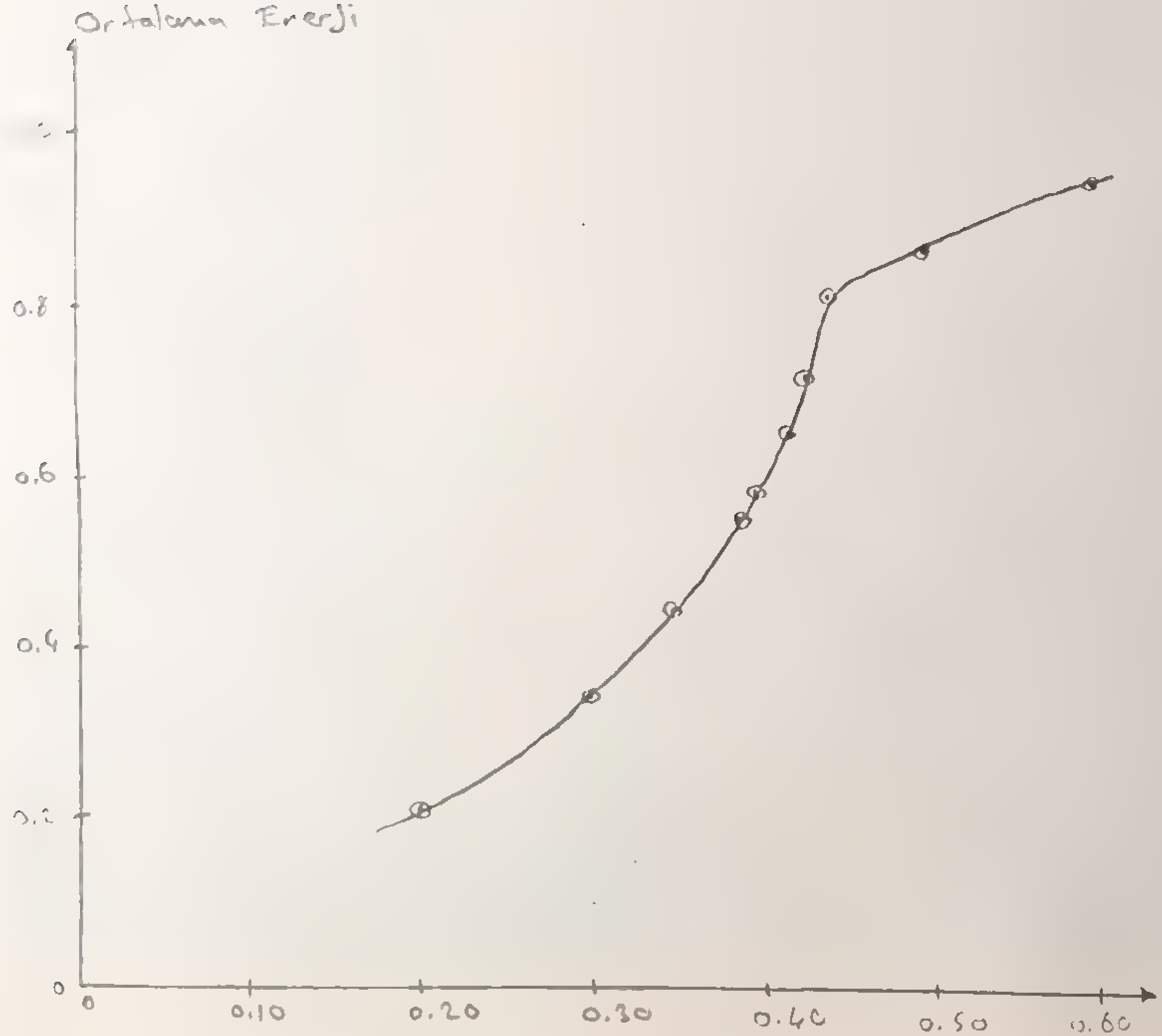
10 x 10 latis için grafikler

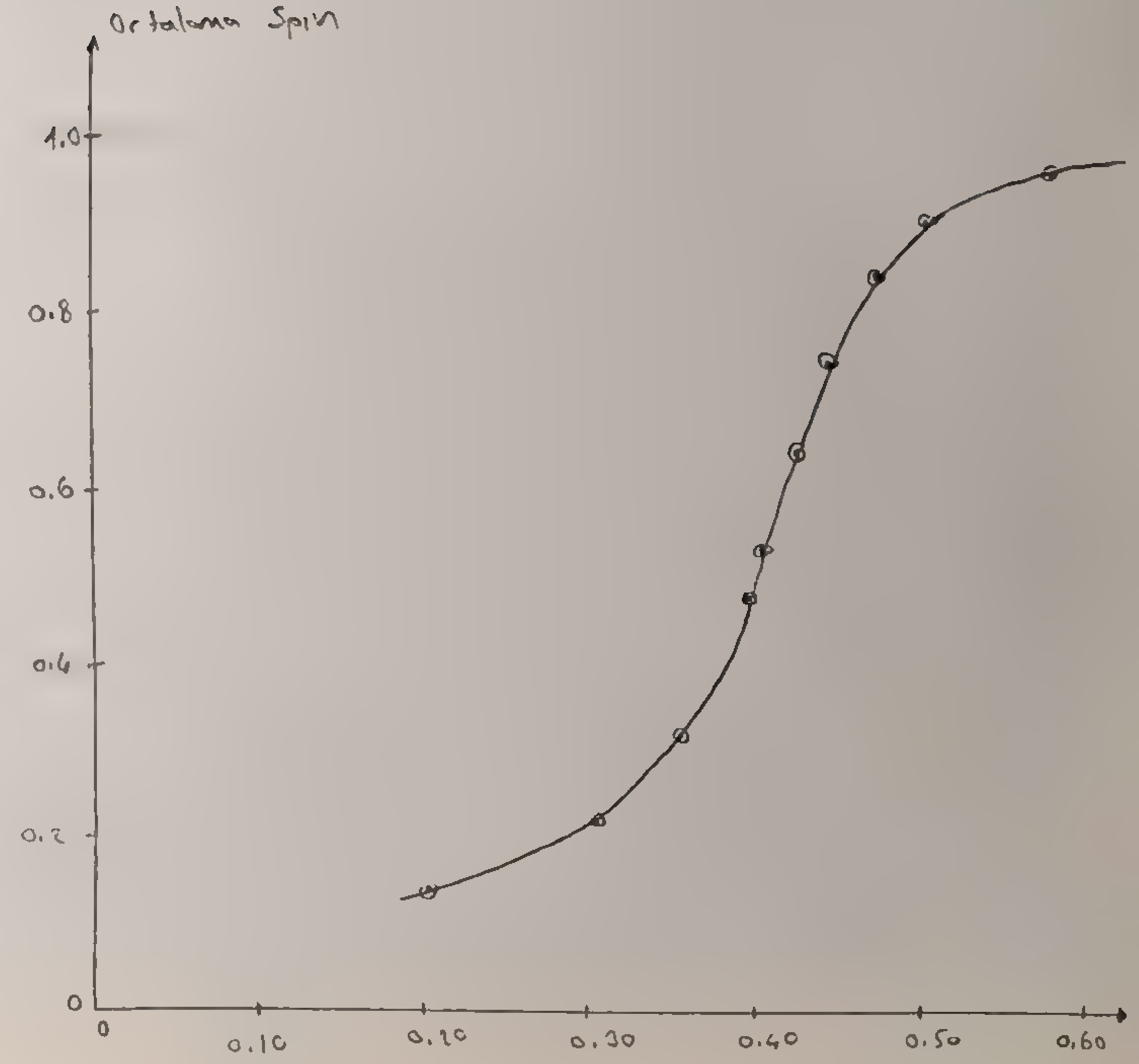
iheat =

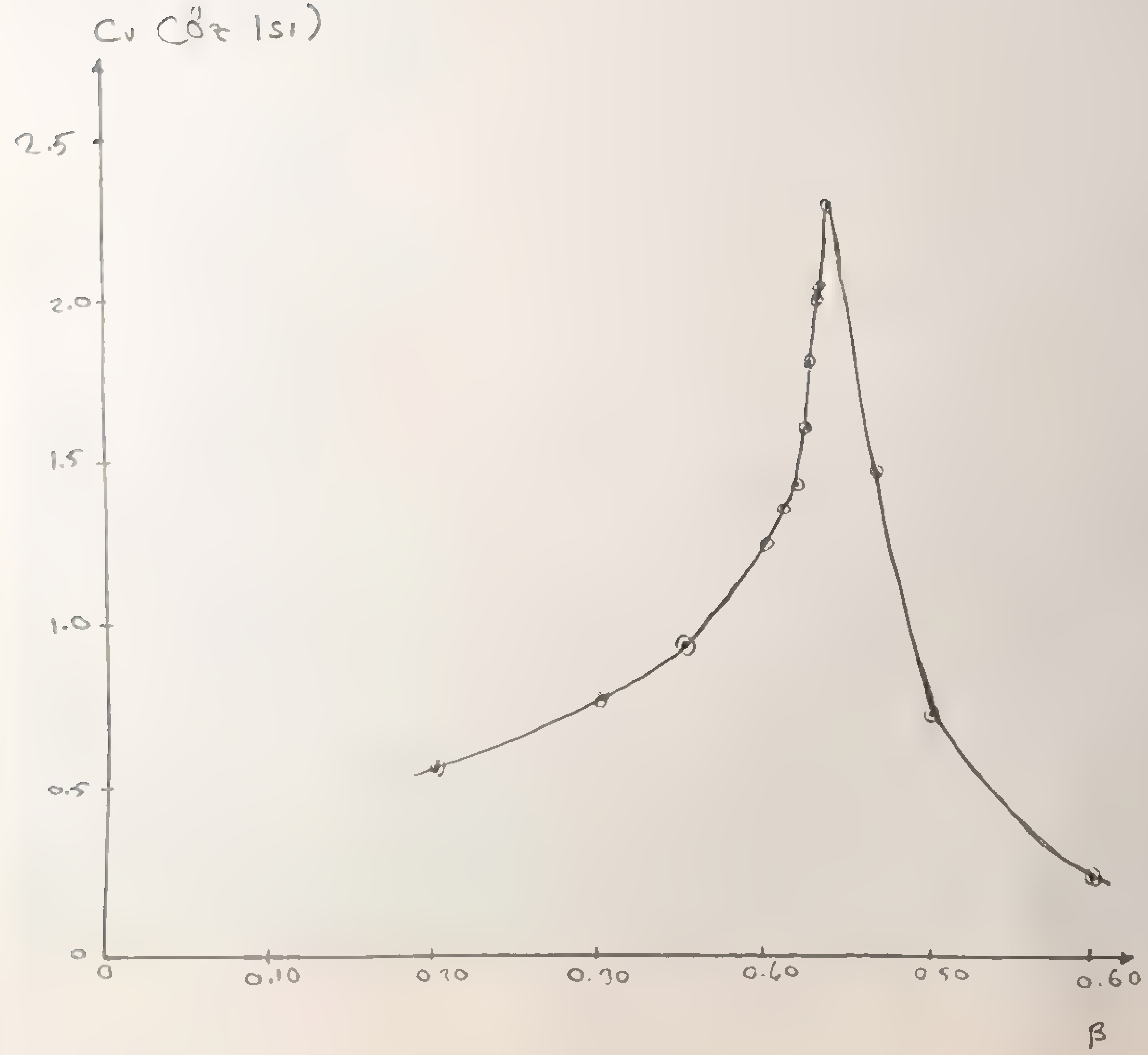
iter =

niter =

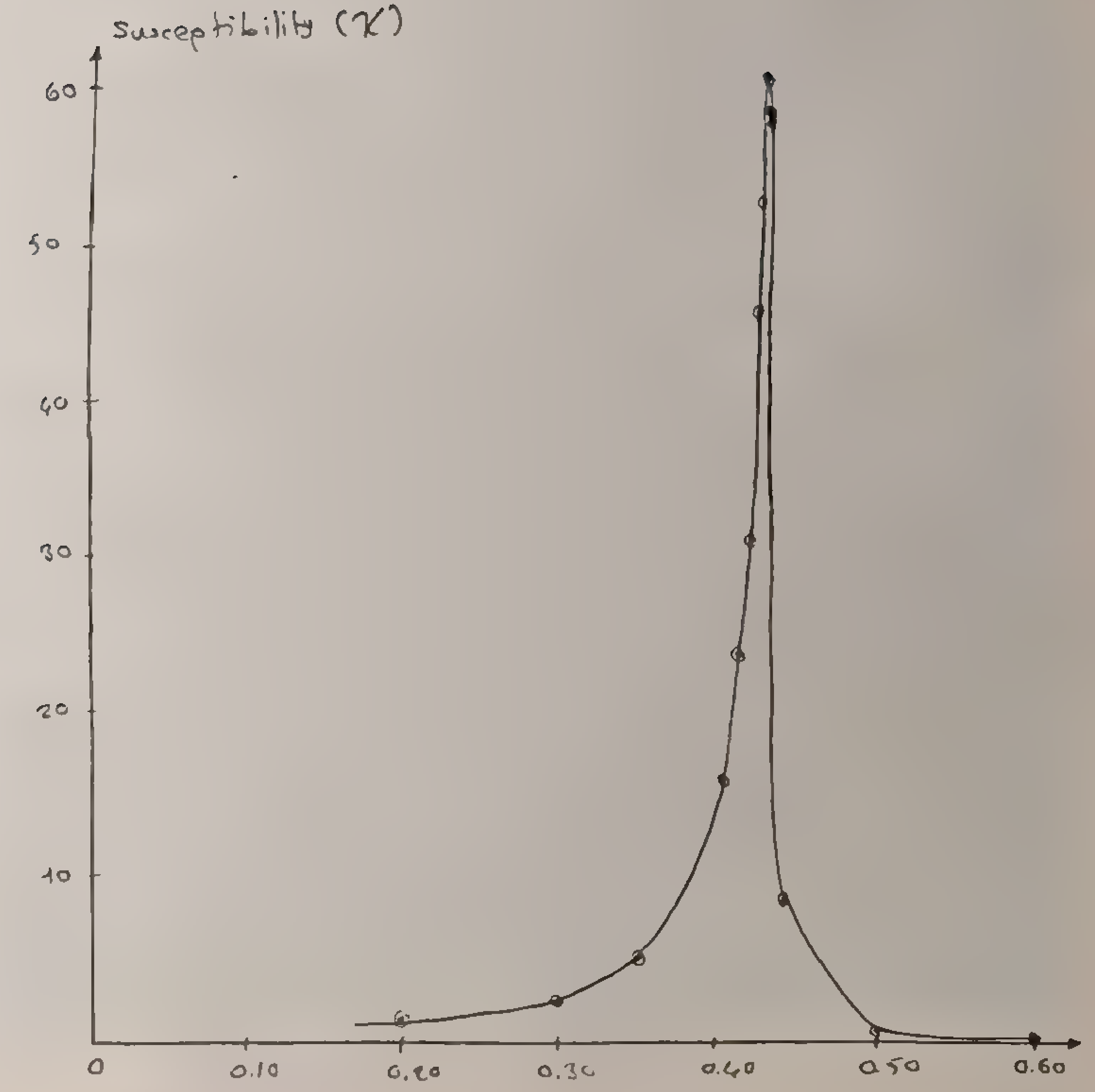
β_{cr} =





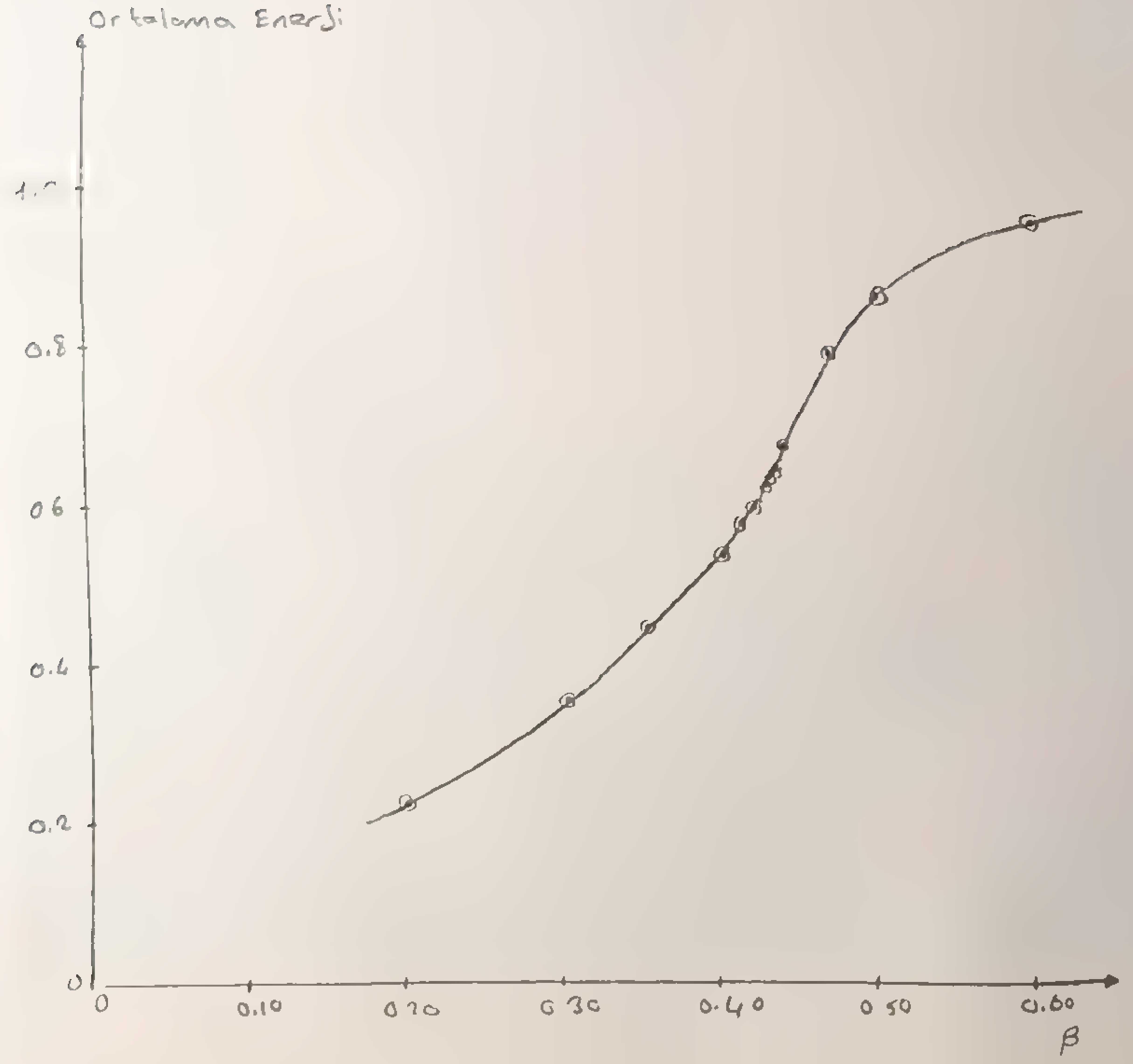


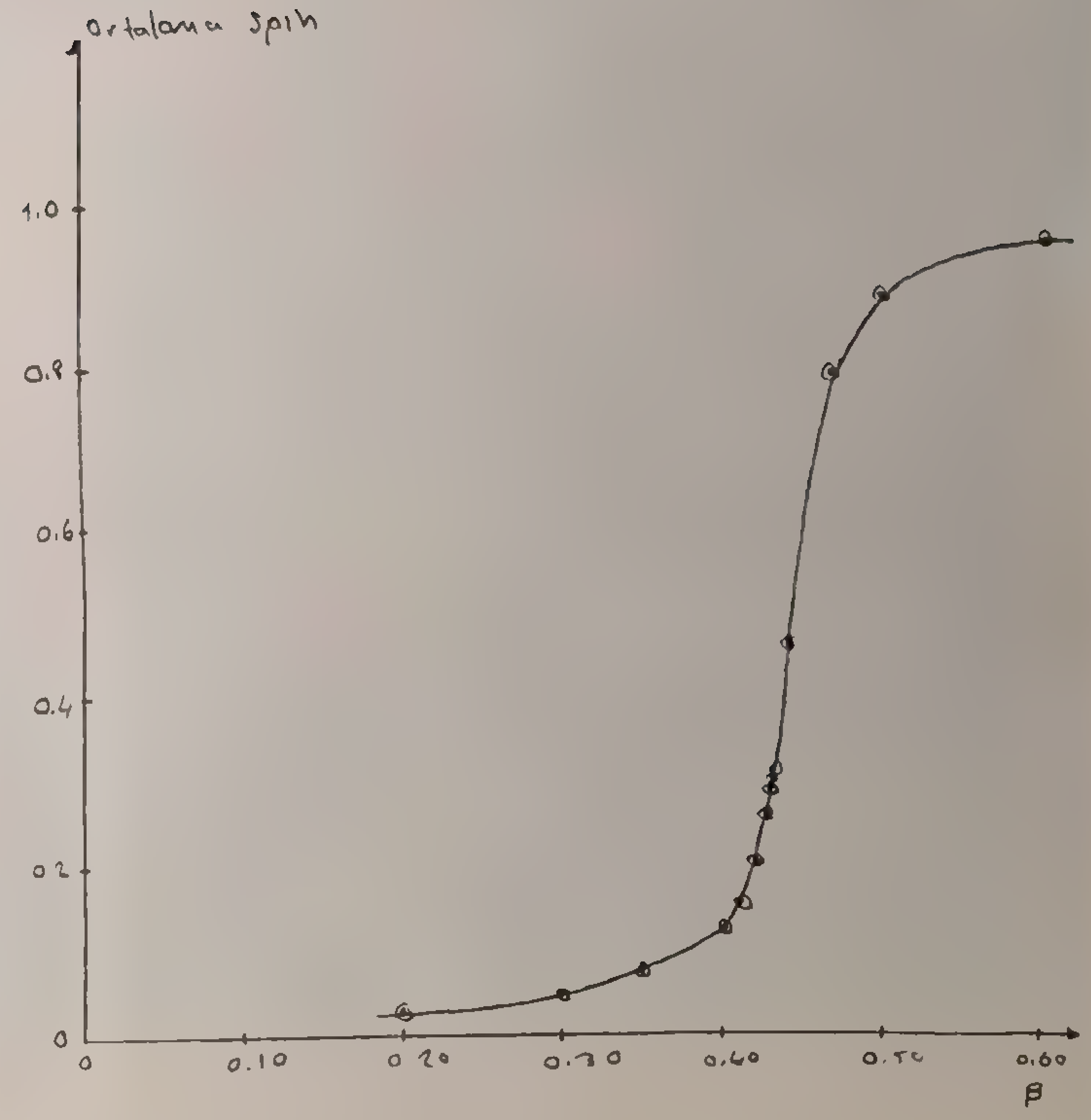
Cv (Öz Isı)
2.5
2.0
1.5
1.0
0.5
0
0
0.10
0.20
0.30
0.40
0.50
0.60
β



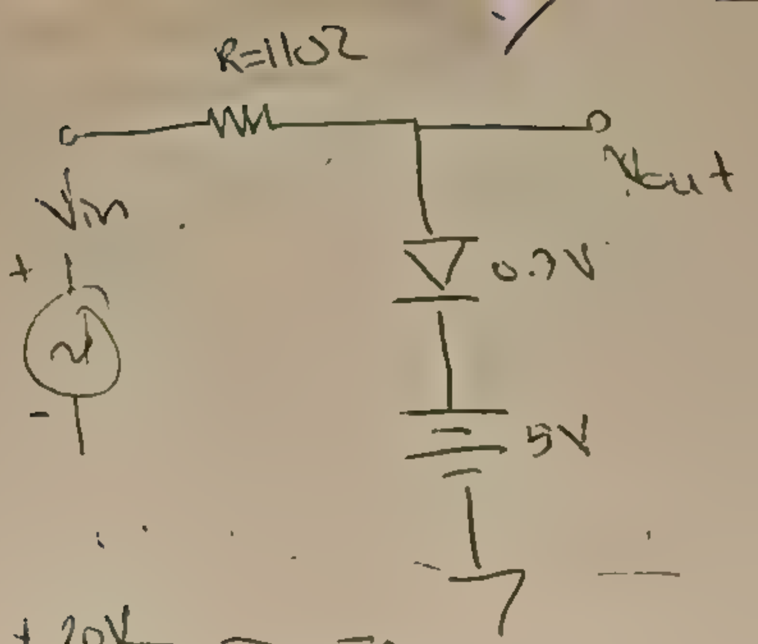
susceptibility (χ)
60
50
40
30
20
10
0
0.10
0.20
0.30
0.40
0.50
0.60

40x40 Latis için Grafikler





ÖRNEK:



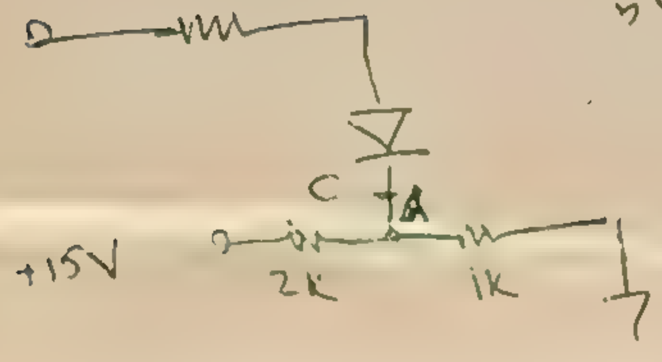
ilk parçada (~) olduğunda

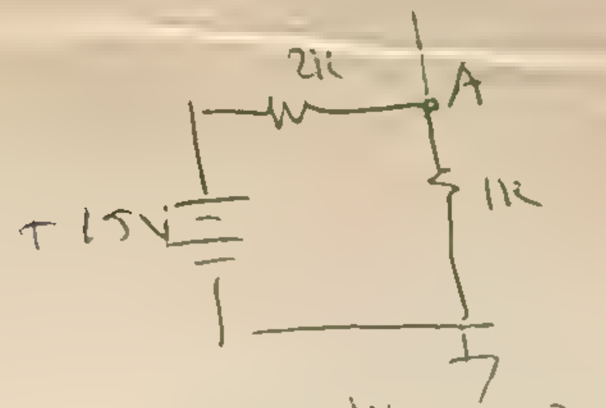
ihmal — R aynı

idi

5V kaynağı yerine bir direnç bölücü kullanırsak.

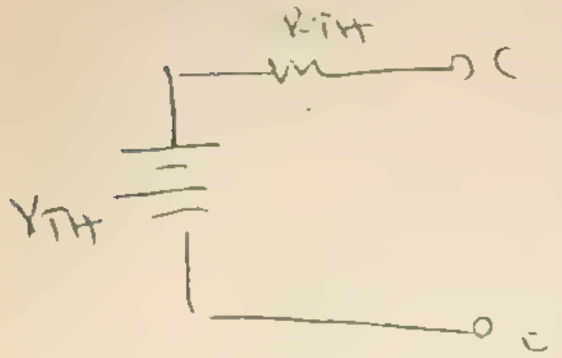
15V girişli yer





$V_A = \frac{1k}{3k} \cdot 15 = 5V$

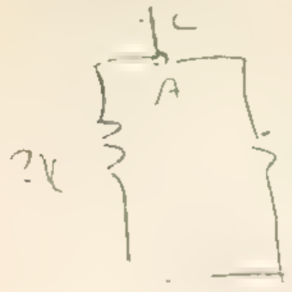
O zaman devre



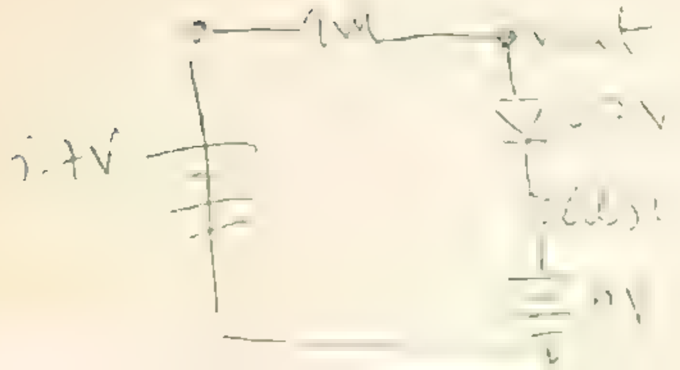
düzen

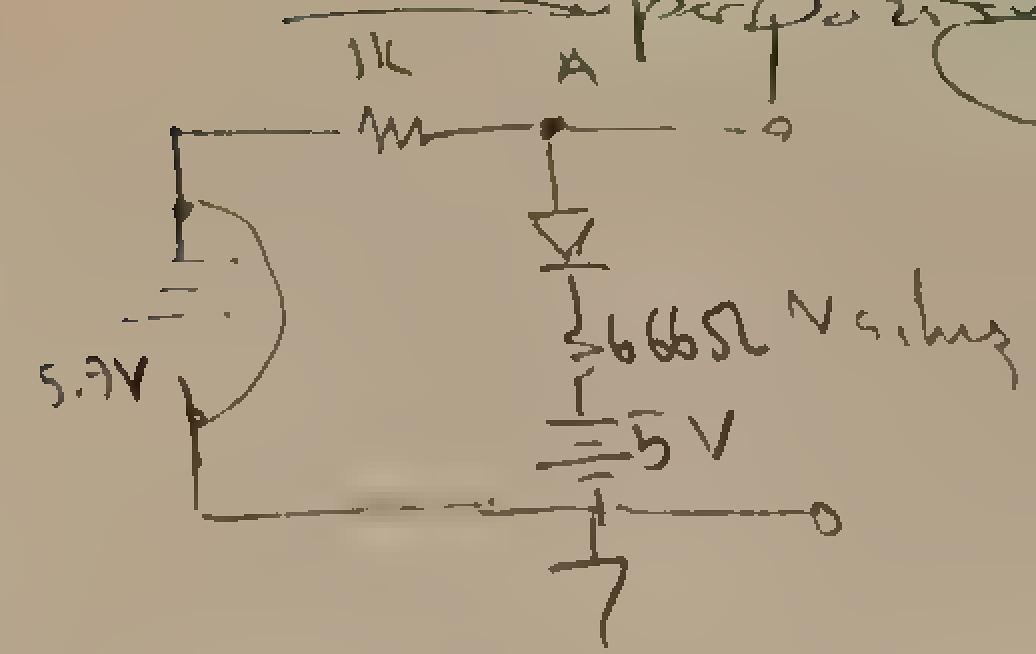
C'den bakıldığında $V_{TH} = 5V$

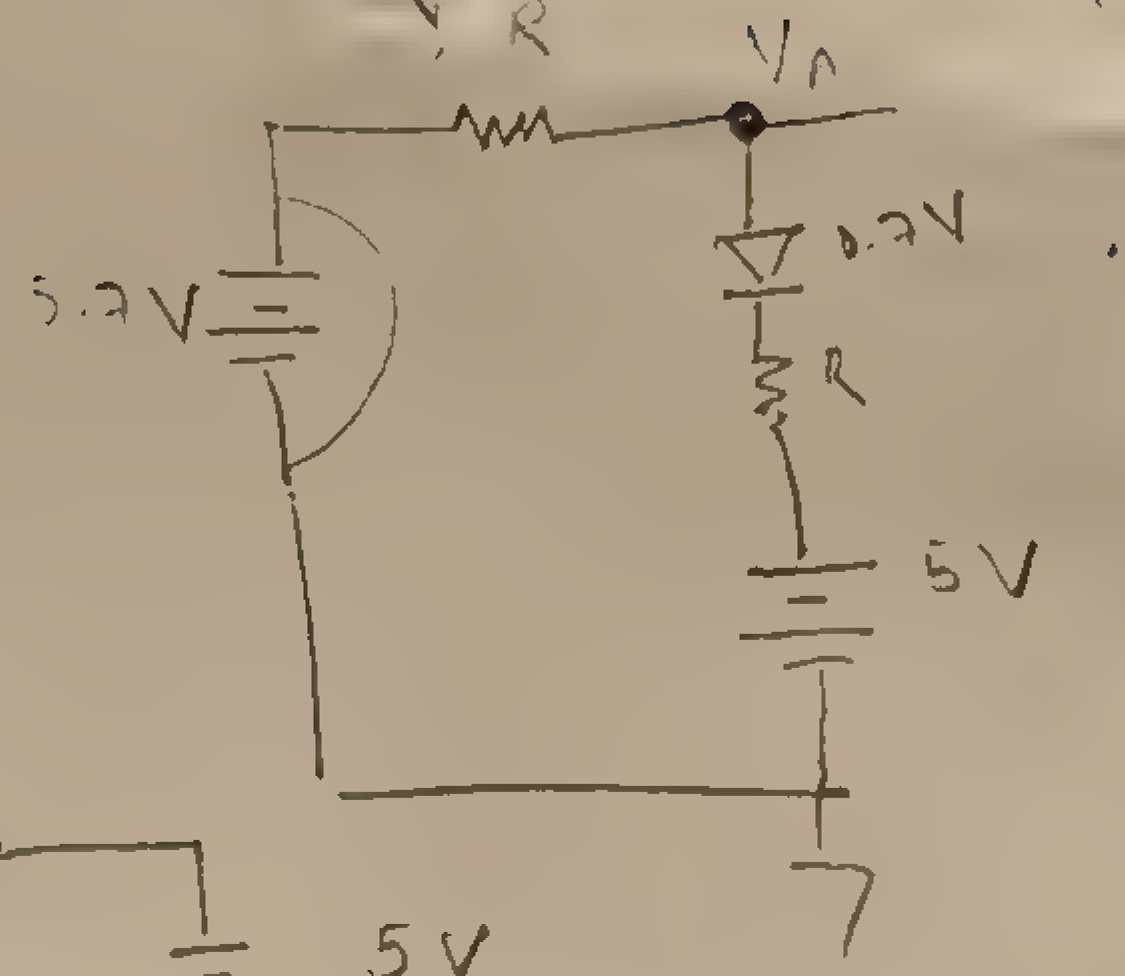
RTH



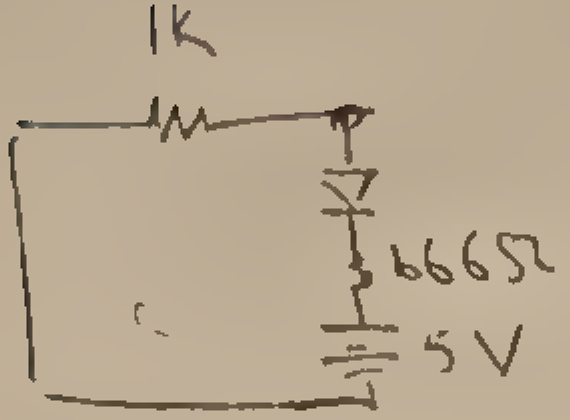
$R_{TH} = 2k \parallel 1k = \frac{2 \times 1}{2+1} = \frac{2}{3}k = 666\Omega$

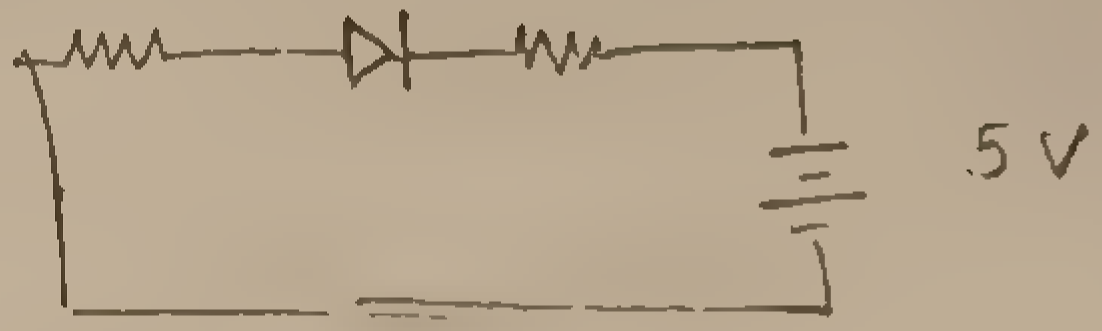


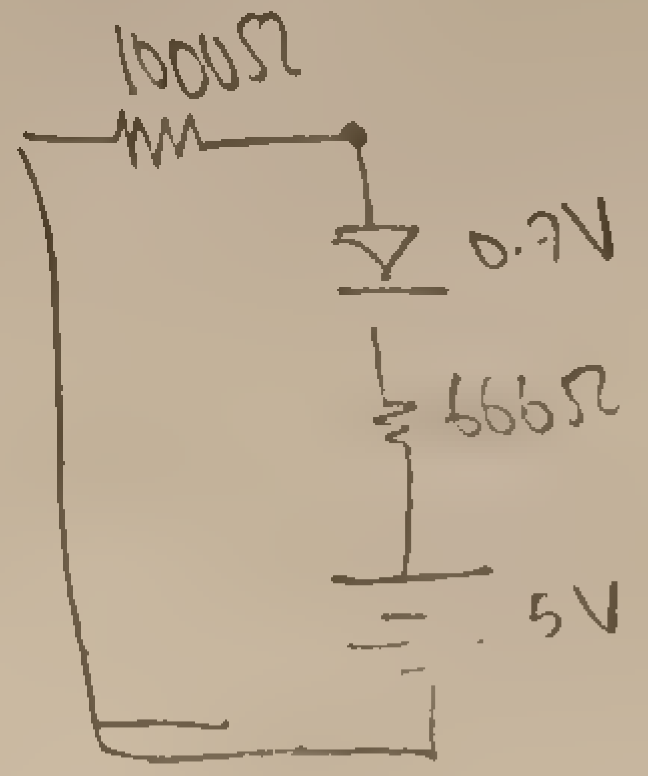




Bahcelievler

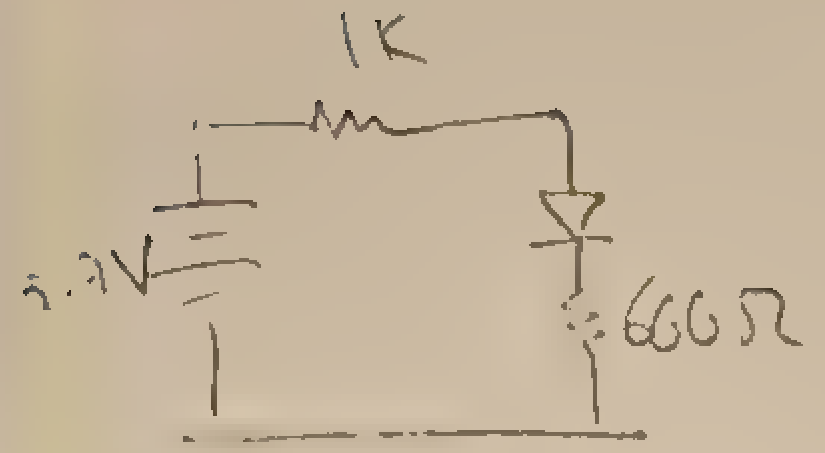






$V = I.R$

$I = \frac{5}{666+1K} = 3.10^{-3}$



$V = I\ R$

$I = \frac{5.7}{1K+666} = 3.42.10^{-3}$

$V = I\ R$

$I = \frac{\ }{1666}$

V_A

$= 7.10^{-3} \cdot 1666$

$= 11.6\ V$

10) Constant Trw. 10-10' ...
11) Gun, Beta, Error
12) ...
13) ...
14) Complex.

Lançbek Gozol'n
Darkwing Duck

Dünbültü

Birgün [illegible] Bey [illegible]

çağırır - Hey, Dümbo!
[illegible]

- Lan Dana, sana kaç defa [illegible], bana [illegible]
[illegible]

[illegible]

[illegible] Dana [illegible]
[illegible]

D6

HACETTEPE Ü. FİZİK MÜHENDİSLİĞİ

In God We Trust

8 Nisan

27 Mayıs

amf /t=84 /k=16 /M

Tan
yA/Beyer

Muray
Cavra

4407098 Omni
Bülent
Murat Erkin.

$r_B > r_A$

gidecek daralır & küçülür
⟶ birim küreye basınç artar.
sola kayar.

3'de β çizgileri oluşmaya başlayacak
α'nın yerinde fark yok şiddeti artar
β'nın az

| konumlar |
sabit
şiddet farklı.

[illegible]

[illegible]

Ayvegi yarım.

Birşey olmaz.

Görmem resim.

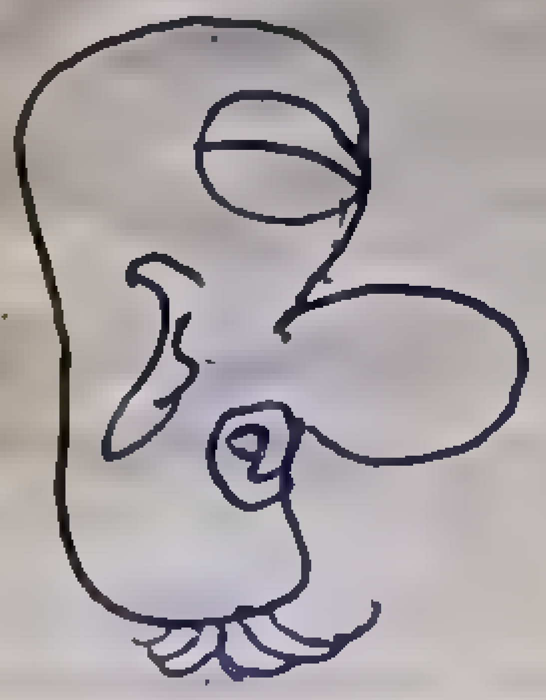
[illegible]

Alenyayla [illegible] olamaz [illegible] gözdoktorundur.

Delete DOS

windows'da açılış

BC4.0 (Compiler var)



Katı : 413

Nükleer : 433

Digital : 473

Lab : 473

423 (Katı) — Fiz 443 (D3) (Nükleer) — Fiz 442 (D5) — Fiz 413 (D3)

13:10 : 483 (D7)

14:00 489 (D3)

14: Fiz 423 (D3)

9:50 423 (D1) (Katı)

Fiz 443 (Nükleer)

449 (D5)

429

13:10 483 (D7) (Spektral)

14:00 Fiz 489 (D3)

14,00 483

9:50 423 (Katı) (D1) 443 (Nükleer)

13:10 483 (Spektral) D7

14:00 489 (D3)

Nutler Fizik (10 Nisan / 15 Mayıs)

(20 Nisan Çarşamba 11'de kat sınavı)

(25 Mayıs) Salı

6,800,000,000,000 TL. 68 trilyon. 6.8 6.8 82 13.6 82 trilyon

GELİR	OCAK		GİDER
1	60372136 UYUŞTURUCU $	RÜŞVET	5000000
2	27680310 SİLAH $	MAAŞLAR	1200000
3	1865120 SUİKAST $	İHTİYAÇLAR	4200000
4	180000 ŞANTAJ $		
5	7695128 GASP $		
6	15007180 SOYGUN $		
7			
8	112279874		10400000
9			
10	KÂR		
11	102,379,874 $.		
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DÜNYA SAATLERİ

Türkiye Zamanına (TR) göre kış saatleri tablosudur.

AFGANİSTAN	+2½		İSVİÇRE	-1	*
ALMANYA	-1	*	İTALYA	-1	*
ANGOLA	-1		İZLANDA	-2	
ARJANTİN	-5	*	JAMAİKA	-7	
AVUSTRALYA			JAPONYA	+7	
Kambera Viktorya	+8	*	KANADA		
Güney Avustralya	+7½	*	Foldland Adaları	-5½	*
Kuzey Avustralya	+7½		Atlantik	-6	*
Batı Avustralya	+6		Doğu Kısım	-7	*
AVUSTURYA	-1	*	Orta Kısım	-8	*
A.B. DEVLETLERİ			Dağlık bölge	-9	*
Doğu Kısım	-7	*	Pasifik ve Yukon	-10	*
Orta Kısım	-8	*	KENYA	+1	
Dağlık bölge	-9	*	KIBRIS	TR	*
Pasifik	-10	*	KOLOMBİYA	-7	
Alaska	-11	*	KOSTARİKA	-8	
Hawai	-12		KUVEYT	+1	
BAHAMA	-7	*	LİBYA	-1	*
BAHREYN	+1		LÜBNAN	TR	*
BELÇİKA	-1	*	LÜKSEMBURG	-1	*
BENGLADEŞ	+4		MACARİSTAN	-1	*
BOLİVYA	-6		MALEZYA	+6	
BREZİLYA			MALTA	-1	*
Fernando de Noronha	-4	*	MEKSİKA	-8	
Doğu Brezilya	-5	*	MISIR	TR	*
Batı Kısım	-6	*	MOZAMBİK	TR	
BRUNEY	+6		NİJERYA	-1	
BULGARİSTAN	TR		NORVEÇ	-1	*
B.A. EMİRLİKLERİ	+2		PAKİSTAN	+3	
ÇEKOSLOVAKYA	-1	*	PANAMA	-7	
CEZAYİR	-1		PARAGUAY	-6	*
ÇİN	+6	*	PERU	-7	*
DANİMARKA	-1	*	POLONYA	-1	*
EKVATOR	-7		PORTEKİZ	-1	*
ENDONEZYA			ROMANYA	TR	*
Batı Bölgesi	+5		SİERRA LEONE	-2	
Orta Kısım	+6		ŞİLİ	-6	*
Doğu Bölgesi	+7		SİNGAPUR	+6	
ETOPYA	+1		SOVYETLER BİRLİĞİ		
FAS	-2		Moskova	+1	*
FİJİ	+10		Omsk	+4	*
FİLİPİNLER	+6		SURİYE	TR	
FİNLANDİYA	TR	*	SUUDİ ARABİSTAN	+1	
FRANSA	-1	*	TAYVAN	+6	
GANA	-2		TANZANYA	+1	
GÜNEY KORE	+7		TAYLAND	+5	
G.AFRİKA CUM.	TR		TRİNİDAD	-6	
HİNDİSTAN	+3½		TUNUS	-1	*
HOLLANDA	-1	*	TÜRKİYE	TR	*
HONG KONG	+6		ÜRDÜN	TR	*
İNGİLTERE	-2	*	URUGUAY	-5	*
IRAK	+1	*	VENEZUELLA	-6	
İRAN	+1½	*	YENİ GİNE PAPUA	+8	
İRLANDA	-2	*	YENİ ZELLANDA	+10	*
İSPANYA	-1	*	YUGOSLAVYA	-1	*
İSRAİL	TR	*	YUNANİSTAN	TR	*
İSVEÇ	-1	*	ZAİRE	+½	
			ZAMBİYA	TR	
* Yaz saati uygulaması olan ülkeler			ZİMBABİA	TR	

ÖLÇÜ VE TARTI BİRİMLERİ DEĞİŞİM TABLOSU

UZUNLUK ÖLÇÜLERİ

1 santimetre (cm)	= 10 mm	= 0.3937 inç
1 metre (m)	= 100 cm	= 1.0936 yarda
1 kilometre (km)		= 1000 m
	= 0 6214 mil	
1 inçh (inç)	=	= 2.5400 cm
1 foot (ayak)	= 12 inç	= 0 3048 m
1 yard (yarda)	= 3 foot (ayak)	= 0.9144 m
1 kara mili	= 1609 m	
1 deniz mili	= 1852 m	

ALAN ÖLÇÜLERİ

1 santimetre kare (cm^2)	= 100 mm^2	= 0.1550 inç kare
1 metre kare (m^2)	= 10000 cm^2	= 1.1960 yarda kare
1 hektar (ha)	= 10000 m^2	= 2.4711 acre
1 kilometre kare (km^2)	= 100 hektar	= 0 3861 mil kare
1 inç kare	=	= 6 4516 cm^2
1 ayak kare	= 144 inç kare	= 929 cm^2
1 yarda kare	= 9 ayak kare	= 0.8361 m^2
1 acre	= 4840 yarda kare	= 4046.86 m^2
1 mil kare (sq mil)	= 640 acre	= 259 hektar

AĞIRLIK ÖLÇÜLERİ

1 gram (gr)	= 1000 mg	= 0.0353 ounce (oz)
1 kilogram (kg)	= 1000 gr	= 2 2046 pound (lb)
1 ton	= 1000 kg	= 1.1023 küçük ton
		= 0 9842 büyük ton
1 ounce (oz)	= 0 0625 pound	= 28 350 gr
1 pound (lb)	= 16 ounce	= 0.4536 kg
1 küçük ton	= 2000 pound	= 0 9072 ton
1 büyük ton	= 2240 pound	= 1.0161 ton

HACİM ÖLÇÜLERİ

1 santimetre küp (cm^3)	=	= 0 0610 inç küp
1 desimetre küp (dm^3)	= 1000 cm^3	= 0.0353 ayak küp
1 metre küp (m^3)	= 1000 dm^3	= 1.3079 yarda küp
1 inç küp	=	= 16 390 cm^3
1 ayak küp	= 1728 inç küp	= 28.320 dm^3
1 yarda küp	= 27 ayak küp	= 0.7646 m^3

TARTILAR

1 litre (lt)	= 1 dm^3	= 0 2642 galon (ABD)
		= 0 2200 galon (İng.)
1 hektolitre (hl)	= 100 lt	= 2.8378 bushel (ABD)
		= 2.7497 bushel (İng.)
1 pint kuru-(ABD)	= 0.9689 pint (İng.)	= 0.5506 lt
1 pint -yaş (ABD)	= 0.8327 pint (İng.)	= 0.4732 lt
1 pinç (İngiliz)	= 1.0321 pint (ABD)	= 0 5683 lt
1 bushel (ABD)	= 64 pint (ABD)	= 35.238 lt
1 bushel (İngiliz)	= 8 galon (İng.)	= 36.369 lt
1 galon (ABD)	= 8 pint (ABD)	= 3.7853 lt
1 galon (İng.)	= 8 pint (İng.)	= 4 5461 lt

GÜÇ BİRİMLERİ

1 kilovat (kw)	= kw	= 102 kg-m/sn
1 kilogram-metre/saniye (kg-m/sn)	= 9 81 x 10^3 kw	= 1 kg-m/sn
1 kilogram-kalori/saniye (kg-cal/sn)	= 4.19 kw	= 427 kg-m/sn
1 beygir gücü (metrik)	= 0 736 kw	= 75 kg-m/sn
1 beygir gücü (hp)	= 0.746 kw	= 76 04 kg-m/sn
1 İngiliz ısı birimi/saniye (BTHU/sn)	= 1.06 kw	= 427 kg-m/sn
1 ayak-libre/saniye (ft-lb/sn)	= 1.36 x 10^3 kw	= 0.318 kg-m/sn

ENERJİ BİRİMLERİ

1 joule	= 981 gr cm	
1 kilogram-metre (kg-m)	= 1 kg-m	= 9 81 x 10^7 joule
1 kilovat-saat (kw-s)	= 3 6 x 10^{13} joule	= 367 x 10^3 kg-m
1 kilogram-kalori	= 860 kw-st	= 3 1562 x 10^8 kg-m
1 beygir gücü-saat (metrik)	= 1 36 kw-st	
1 beygir gücü-saat	= 1.341 kw-st	
1 BTHU	= 3.41 x 10^9 kw-st	
1 ft-lb	= 2 66 x 10^8 kw-st	

ISI DEĞİŞİM FORMÜLÜ

CELSIUS C= 5/9 (F-32) f= 9/5 C+32

FAHRENHEIT f = 9/5 C + 32

ESKİ ÖLÇÜLERİMİZ

Uzunluk Ölçüleri:

1 fersah		= 5685 m
1 berid	= 4 fersah	= 22740 m
1 merhale	= 2 berid	= 45480 m
1 endaze (arşın)		= 65 cm
1 kulaç	= 2 endaze	= 1 3 m

Ağırlık Ölçüleri:

1 dirhem		= 3.2 gr
1 okka	= 400 dirhem	= 1 282 kg
1 kantar	= 44 okka	= 56.408 kg
1 batman	= 6 okka	= 7.692 kg

44) / 9:30

NÜKLEER FİZİK

I – II

— D1 —

Cem

(40)

193.140.210 .

Fizik Müh.

Özgen Birgül / 1937

1959 [illegible]
1961 [illegible]

Fundamentals of Nuclear Physics 10:40

TÜM SONUÇLARDA ENERJİ
MeV cinsinden

18 Kasım 1. Vize 9^{15} [illegible]

16 Aralık 2. Vize

Introductory Nuclear Physics [illegible] ,11
John Wiley & Sons

Elements of Nuc. Physics

48 28

[illegible]

[illegible] Foundat[illegible]
Analiz[illegible]

[illegible]

[illegible]

kat = 17/6/96 9:15
D1 - D2

Nükler - 13:15 D8
20/6/96

@bey.cc.hun.edu.tr

http://bey.cc.hun.edu.tr/~

→ Yerel veri yolu : PCI

→ işlemci : Pentium-66 (Power PC)

→ Kasa : TOWER (2 X 2.85" 3 ; disket sürücü + 4 sürücü yuvası + 10 genişleme yuvası)

→ Grafik kartı : Matrox - 5 MB (1600 x 1280 çözünürlükte 16.7 milyon renk desteği)

→ Monitör : 85 MHz yatay, 100 MHz dikey, multiscan, non-glare dot pitch, flatsquare, noninterlaced, 21", 145 MHz video band genişliği, PAL, SECAM, NTSC, VGA desteği vb.

→ Ses kartı : 32 kanal, 16 bit kayıt ve örnekleme, MIDI, CD ROM desteği, şekillendirme, mikrofon girişi, stereo kulaklık çıkışı, vb, WS (TAM + başka özellikler) sentezleme

→ RAM : 64 MB 40 ns (Anakartta 512 MB'a genişletilebilir)

→ Hard disk : (SCSI-2) 2 GB 8 ms. 1 MB Cache bellek.

→ Tarayıcı : 2400 dpi çözünürlük, 24 bit, 1 milyon renk, A2 boyutunu tarayabilme.

→ Printer : Laser Printer 2400 dpi x 2400 dpi çözünürlük, renkli, dk 10 sayfa, duplex.

HÜ. Fizik Müh. Bölümü
3. sınıf öğrencisi

In God We Trust
1992-'93

Mat: 10 Mayıs.

Richard Marx : Hazards

Love / Kiss 1986
Runaway / Paracadit
Jeremi Jordan / Right kind of Love
Billy Ray Cyrus / Achy Breaky Hearth
Spin Doctors / Two Princes
Haddaway / Life

18 Ek-2016

Eklesit

Fit 333

Introduction to Solid State Physics

Charles Kittel 6th edition.

ISBN-0 471-57474-4

John Wiley & sons

A x	Bosluk %	İkı adet işareti :
B ≃	Bosluk ϟ	3 adet işareti ∞
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/ ∂ • ~ % ∅ 9 Ω 6 4 ≡ : ∝ # = ∅ Adet işaretleri

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CC BB

Δ : Sezar grubu bitti işareti

İLKOKUL

Yıllık
Ünite
Günlük

PLAN DEFTERİ

Öğretim Yılı : 1992 / 1993

Okulun Adı: ......HACETTEPE UNIVERSITY..................

~~Öğretmenin~~ Öğrencinin

Adı ve Soyadı ....

Doğum Yeri ve Yılı : Bostan ....

Mezun Olduğu Okul ....

Mezun Olduğu Yıl : ....

~~Sicil No~~ okul No : ....

~~Emekli Sicil No~~ : ....

~~Kıdemi~~: ....

~~Derece ve Kademesi~~ : ....

~~Okuttuğu Sınıf~~ Okuduğu sınıf : III ....

Bu Sınıfı Kaç Yıldır ~~Okuttuğu~~ Okuduğu : .....1..

~~Öğrenci Sayısı~~:

Erkek : ...X........... Kız : .... Toplam : ....

Teftiş Tarihleri: ...../..../19... ..../..../19... ..../..../19...

- - - - - - ve böylece devam etmiş!

Olayın geçtiği vatan: Boston, America

Yazan: Abraham (İbrahim) L[illegible]n

Şahit: Ri[illegible] Ro.

Encyclopedia of Electronic circuits
Volume 1 (# 1938)
Volume 2 (# 3138)
Volume 3

Rudolf F Graf

Volume ③ ISNB 0-8306-7348 ; 348
Volume ② ISNB 0-8306-9138
Volume ① ISNB 0-8306-0938

13 - Ocak,
[illegible]

TAB BOOKS Blue Ridge Summit, PA 17294-0850
(a division of McGraw-Hill Inc)

Infofeast
Prime
Firefly
Era
X-TAL
WORM
DEMON

BLUE BOY INC.
ÜRÜN YELPAZESİ

AMAÇ!

1. Ay: 5 bilgisayar 1 milyon TL. ya ürünü
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3. Ay: 20 " 5 " TL " "
4. Ay: 25 " 10 " TL " "
5. Ay: 30 " 20 " TL " "
6. Ay: 40 " "
7. Ay: 60 " "
8. Ay: 80 " "
9. Ay: 100 " 50 milyon TL ya.
10 Ay: 120 " "
11 Ay: 140 " "
12. Ay: 180 " 50 milyon TL ya ürünü

TAM UYUMLU YAN
ÜRÜN ANLAŞMALARI?:

C++ 3.1
MSFORTRAN 5.1
PROLOG
COREL DRAW 4.1
MATLAB

Turbo C+1

V

Corel Draw 4.0 Türkçe

(A)* Electromagnetics Fields and the Waves (P. Lorrain, DR Corson) (WH Freeman and Company)
Electricity (CA. Coulson, T. JA Boyd)
Foundation of Electromagnetic Theory (J.R Keitz, FJ Milford)
~~(A)Field And Wave Electromagnetics (David K. Cheng)~~

* ~~[illegible]~~ OK

* Nature of Chemical Bond Sinus (Pauling)
Fractional Mechanics (Tetelman)
Feyman Lectures (Feyman)

~~A * Mathematical Methods for Physical Science (Mary L. Boas) (A)~~
John Wiley & Sons Inc.

A * Quantum Physics (Resnick,) (A)
J

* Programming in Prolog (Clocksin, Mellish) Springer, Verlag
Turbo Prolog Ver 2.0, Borland (A) Users Guide

A * Electronic Devices / Floyd / Bell & Howell Company
Columbus, Ohio 43216

Fundamentals of Optics FA Jenkins & White McGraw-Hill Company
Statistical Treatment of Experimental Data / D Young

An Introduction to Statistical Physics
John Wiley and Sons, Reprinted 1985
Rosser, W.G.V

CPU	P5 / 66 MHz
RAM	16 MB (40ns) (max 256 MB)
Cache Bellek	1 MB (or 512 KB)
Monitor	21" 0.25 dp, 1600 x 1280, non-interlaced dark tinted, mikro işlemcili, digital
Ekran Kartı	Matrox MGA ULT+ (PCI) (1600x1200, 1280x1024, 800x600 desteği, WRAM:) 4MB RAM, (2MB DRAM), Real time, 3D
Hard Disk	2 GB, SCSI II arabirim, önbellekte I/O kartı, 512 KB ön bellek 9 ms
Ses Kartı	16 Bit 44.1 KHz stereo örnekleme
Disket sürücü	2 x 3.5" 2.88 MB
Mause	MS Ball Point
Genişleme Yuvası	8 Boş (32 bit)
Port	2 seri, 2 paralel, 1 Game
Modem	Intel 14400 baud (bps)
Printer	Dot matrix, 24 pin, 136 kolon, 105 cps LQ mod hızı, renkli, 256 KB buffer, 13 yerleşik font, ölçeklenebilir fontlar, park özelliği, 3 yönlü yükleme.
CD sürücü	128 ms. / Record özellikli
Printer	HP Laser Printer 4M

MS DOS 6.02

MS WINDOWS 3.1 (Türkçe)

Norton Desktop

PC TOOLS 8.0

WIN/TV

PC Cillin

CPAV

Pro Audio

Borland C++ & Application Framework 3.1 4.0

Borland Turbo Pascal 7.0

MS Fortran 5.1

MASM

MS Quick Basic 4.5

Professional Write

Word Perfect 5.1

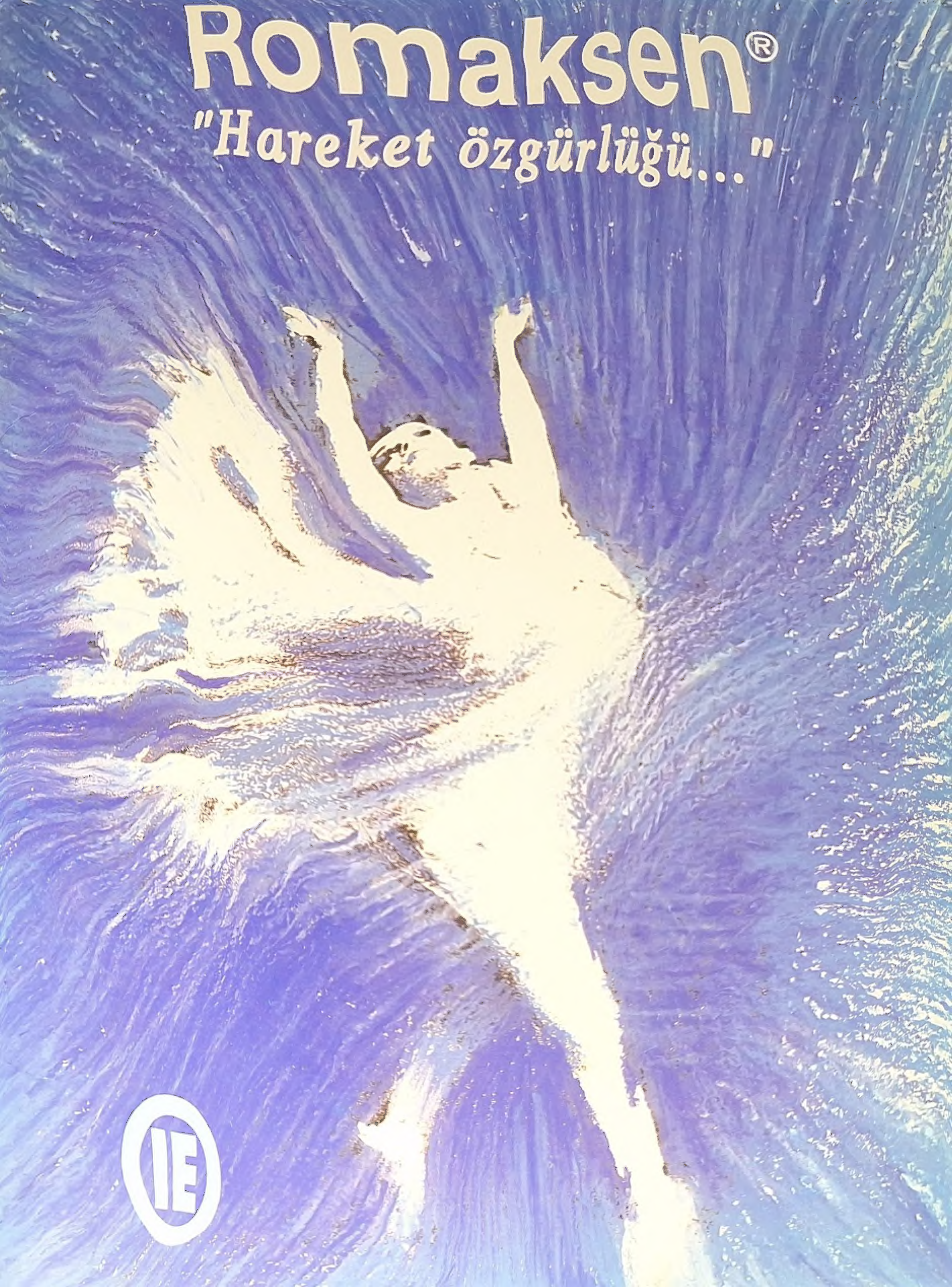
[illegible]

Spin Doctors / Two princes
Haddaway / Life
New Order / World
Ling (1986) / Love
[illegible] / Runaway Train (1993)
[illegible] / [illegible]
/ Sound of Silence
/ Great Love
/
/
[illegible] the liberance / Paul McCafferty

ELECTRONICS

- Principles of electric circuits
- Electronic Devices

Thomas L. Floyd
Charles E. Merill Co.

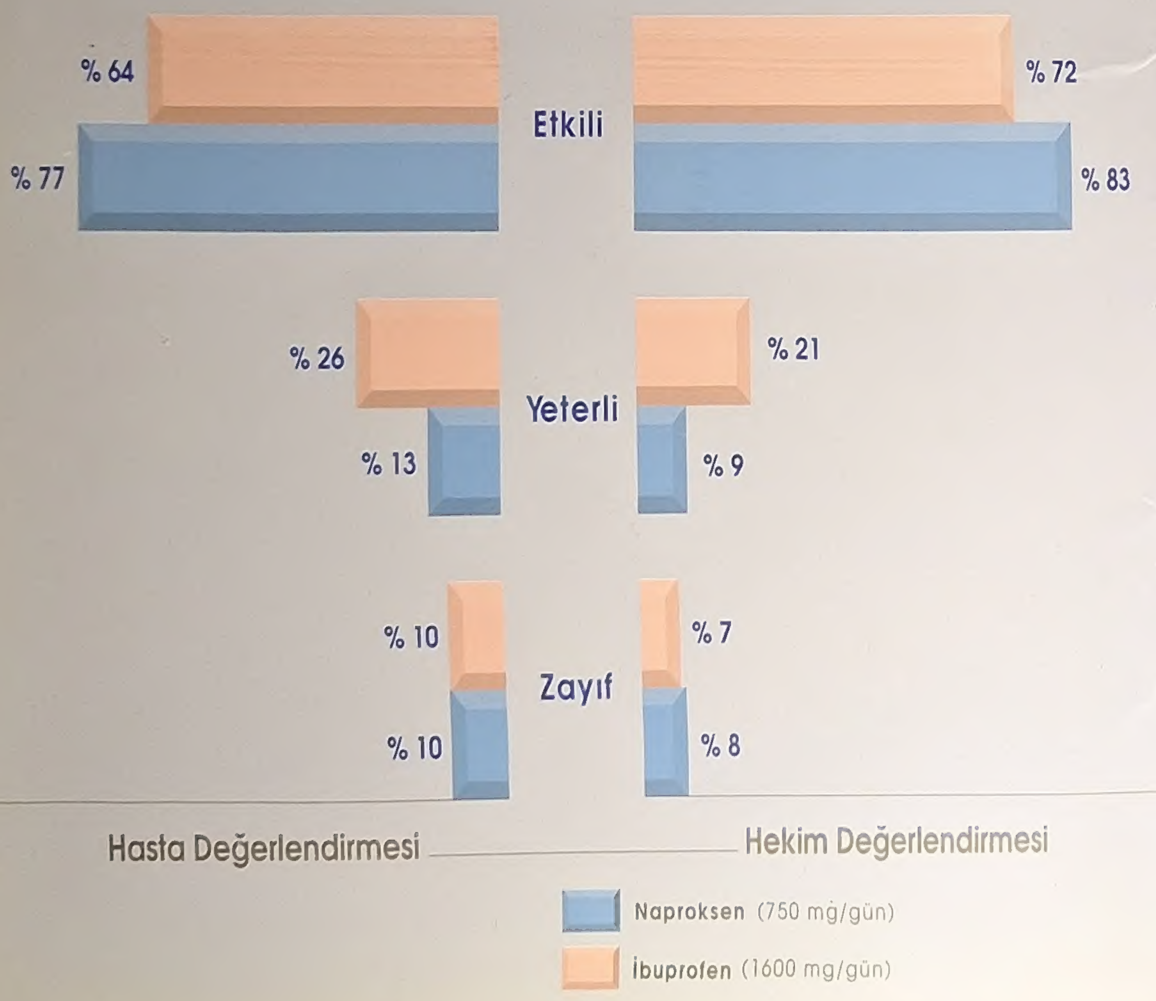

Romaksen®
"Hareket özgürlüğü..."

Romaksen® ▷ Romatoid Artrit

Naproksen (Romaksen®), romatoid artrit tedavisinde antienflamatuar - analjezik etkinlik açısından değerlendirilmiş, ağrılı eklem ve şiş eklem sayısının önemli oranda azaldığı bildirilmiştir.(1)

SEMPTOM	AZALMA ORANI 2. Hafta	AZALMA ORANI 6. Hafta
Ağrılı Eklem	% 21	% 34
Şiş Eklem	% 29	% 41

Naproksen (Romaksen®), sabah sertliği süresini kısaltmada İbuprofen'e göre daha etkili bulunmuştur.(2)



Romaksen® ▷ Osteoartrit

Naproksen (Romaksen®) ile Diklofenak sodyum, 60 osteoartritli yaşlı hastada değişik semptomları (günlük aktivite sırasındaki ağrı, gece ağrısı, ağırlık kaldırmada duyulan ağrı, inaktivite sertliği) giderme açısından karşılaştırılmış ve 12 haftalık tedavi sonuçları hekimler tarafından değerlendirilmiştir.(3)

Naproksen (Romaksen®)		Diklofenak sodyum
% 8	Çok iyi	-
% 73	İyi	% 56
% 19	Yeterli	% 40
-	Zayıf	% 4
% 81	BAŞARI	% 56

Romaksen® ▷ Eklem Dışı Romatizmal Hastalıklar

Naproksen (Romaksen®)'in güçlü antienflamatuar - analjezik etkisi ile eklem dışı romatizmal hastalıkların tedavisinde başarılı sonuçlar alınmıştır.(4)

Romaksen®	Fibrozit	Tenosinovit	Travmatik artrit	Postinfektif artrit	Omuzlarda periartrit	Sinovyal kist	Tenisçi dirseği	Postural ağrı	Kas ağrısı	BAŞARI
Çok iyi (%)	100	70	100	100	80	100	84	80	87	89
Yeterli (%)	-	-	-	-	-	-	-	13	13	3
Etkisiz (%)	-	30	-	-	20	-	16	7	-	8

ÜRÜN BİLGİSİ

Bileşimi	Tablet	Fort tablet	Supozituvar
NAPROKSEN	250 mg	500 mg	500 mg

ÖZELLİKLERİ:
Romaksen antienflamatuar, analjezik ve antipiretik etkilere sahip N.S.A.İ'dir. Etkisini prostaglandin sentezini inhibe ederek gösterir. Oral yoldan alındıktan sonra mide-barsak kanalından hızla ve tam olarak absorbe olur. 2-4 saat içerisinde doruk plazma düzeyine ulaşır. 500 mg a kadar olan dozlarda kan düzeyi dozla orantılı olarak yükselir. Fakat daha yüksek dozlarda bu orantı kaybolur ve kan konsantrasyonundaki artış durur. Sabit plazma düzeylerine 4-5 dozdan sonra ulaşır.
Romaksen'in plazma yarı ömrü 13-14 saat olup, terapötik seviyelerde plazma proteinlerine % 99 oranında bağlanır, % 95 oranında idrarla itrah edilir.

ENDİKASYONLARI:
Eklemleri tutan romatizmal hastalıklar: Romatoid artrit, osteoartrit, juvenil romatoid artrit, ankilozan spondilit.
Eklem dışı romatizmal hastalıklar: Tendinit, sinovit, tenosinovit, bursit, akut gut artriti.
Ağrılı durumlar: Dismenore, migren, nevralji, siyatik, lumbago ve postoperatif ağrılar.

KULLANIM ŞEKLİ ve DOZAJ:
Romatizmal hastalıklarda başlangıç dozu yetişkinlerde sabah, akşam 500 mg.dır. (2 tablet) Günlük toplam doz 1.250 mg'ı geçmemelidir.
Akut gut krizlerinde başlangıç dozu 750 mg olup, daha sonra kriz geçene kadar 8 saatte bir 250 mg. verilir.
Primer dismenore, akut tendinit ve bursit ile diğer ağrılı durumlarda bir defada 500 mg.lık dozu takiben 8 saatte bir 250 mg verilir.
Supozituvar formunun, akut ya da kronik kas, iskelet, yumuşak doku iltihaplarında başlangıç dozu: Yetişkinlere günde 2 defa 1 supozituvardır. Uzun süren uygulamalarda doz hastanın vereceği klinik cevaba göre azaltılabilir.

BAŞLICA ETKİLEŞİMLERİ:
Oral antikoagülanlar, sulfonilüreler ve hidantoin türevleri ile etkileşebilir. Probenesid ile birlikte kullanımı naproksenin yarılanma ömrünü uzatarak etkin plazma konsantrasyonunu arttırır. Magnezyum ve aluminyum hidroksit ile kullanımı absorpsiyonunu düşürür. Sodyum bikarbonat ile birlikte kullanımı ise absorpsiyonunu arttırır.

YAN ETKİ ve UYARILAR:
Romaksen'in başlıca yan etkileri G.İ.S. ile ilgili olup bunlar; mide yanması, bulantı, hazımsızlık, kabızlık, ishal ve kanamadır. Ayrıca, santral sinir sisteminde başağrısı, başdönmesi, kulak çınlaması, deride allerjik belirtiler, kaşıntı, purpura ve terleme, dolaşım sisteminde ödem, çarpıntı, dispne ve genel olarak da susama, işitme ve görme bozuklukları gibi yan etkilere neden olabilir. Seyrek olarak granülositopeni, trombositopeni, hemolitik anemi, aplastik anemi oluşturabilir.
Romaksen ile tedavide; glomerüler nefrit, interstisyel nefrit ve nefrotik sendrom gelişebilir. Romaksen böbrek yetmezliği olanlarda dikkatle kullanılmalıdır.

KONTRENDİKASYONLARI:
Naproksene aşırı duyarlı olanlar ile aktif mide-duedonum ülseri bulunanlarda, hamilelerde, süt emzirenlerde kontrendikedir.

TİCARİ ŞEKLİ:

	FİATI (3.1.1992)
250 mg x 20 Tablet	11.400.- TL.
500 mg x 20 Fort Tablet	22.500.- TL.
500 mg x 10 Supozituvar	21.000.- TL.

LİTERATÜR:
1) Current Med. Res. and Opin.; Vol. 12, No. 2, 1990 2) Current Med. Res. and Opin.; Vol. 9, No. 6,1985 3) The British Jour. op Clin. Prac.; July 1985 4) Arznelm-Forsch. (Drug Res.) 25, Nr. 2n (1975) Katona-Naproxen.

Ayrıntılı bilgi için: Davutpaşa cad. No: 12 (34473) Topkapı-İSTANBUL Tel: 544 46 10

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İlaç Sanayii Türk Anonim Şirketi

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